

KIC 003868588

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
003868588-01	OBS	No	1.059254	131.504025	20.7	4.807	7.6	8.1	2.15	7723	1.12	25061.27
003868588-02	OBS	No	185.846983	158.611930	397.9	10.767	12.9	8.7	2.15	7723	4.69	25.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003868588-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
003868588-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

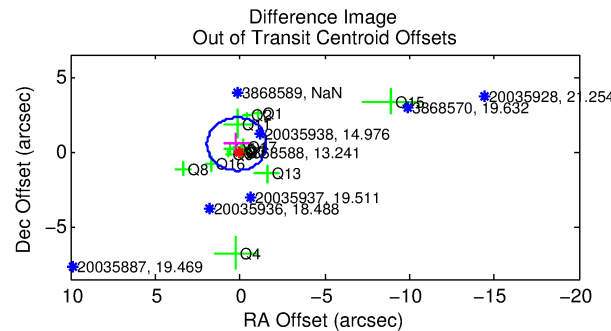
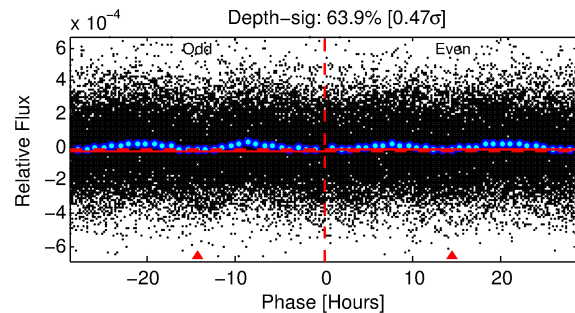
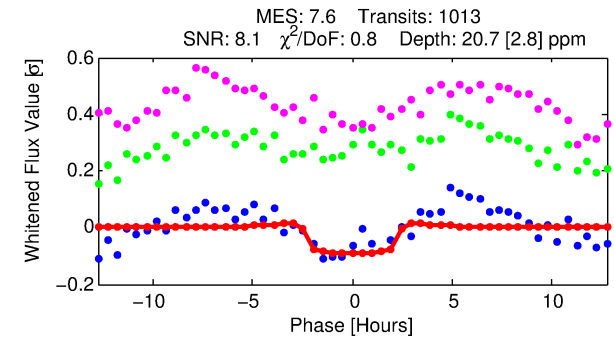
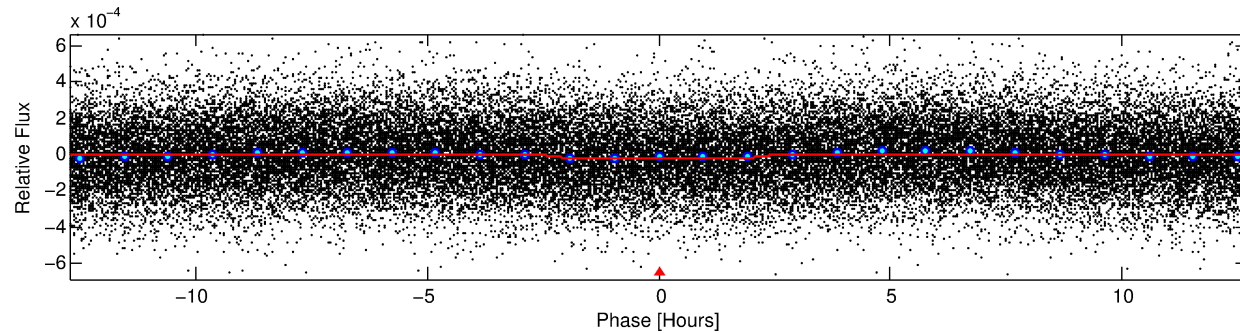
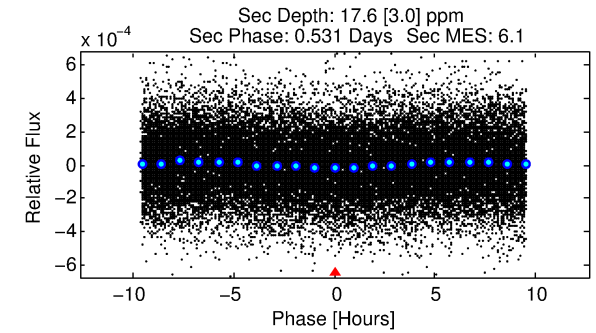
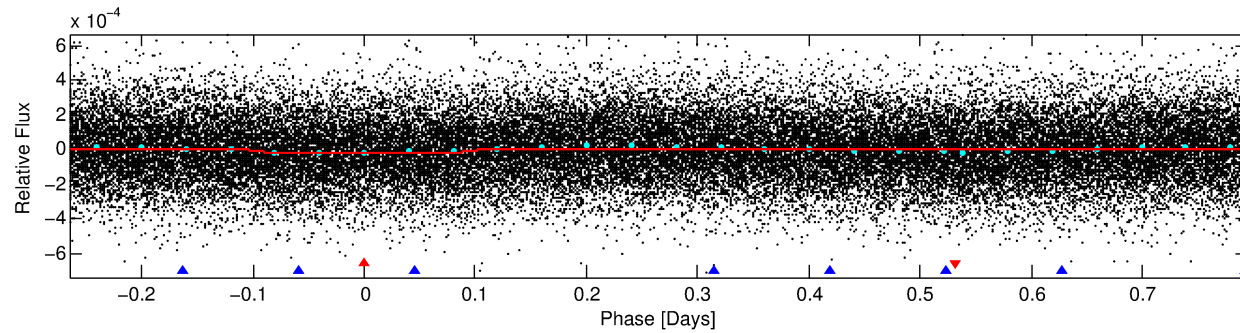
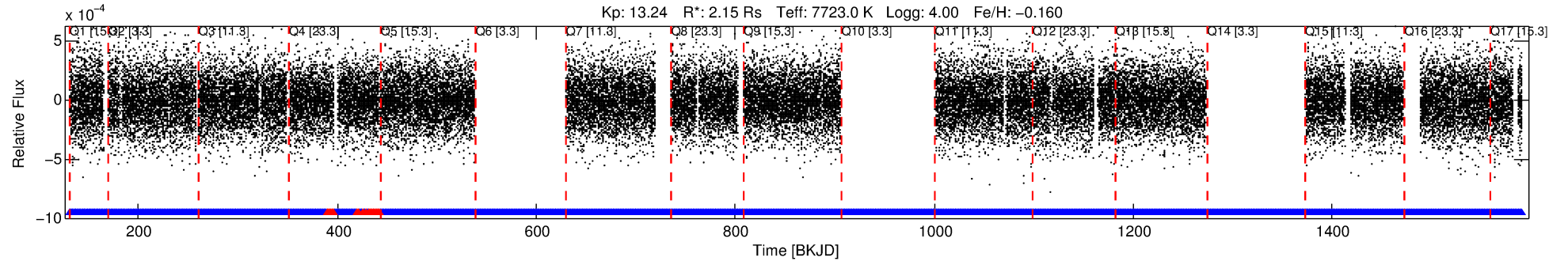
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003868588-01

No Significant Match Found

DV One-Page Summary

KIC: 3868588 Candidate: 1 of 2 Period: 1.059 d



DV Fit Results:

Period = 1.05925 [0.00002] d
Epoch = 131.5040 [0.0054] BKJD
Rp/R* = 0.0048 [0.0021]
a/R* = 1.24 [1.15]
b = 0.88 [0.70]
Seff = 25061.27 [10482.47]
Teq = 3208 [335] K
Rp = 1.13 [0.60] Re
a = 0.0243 [0.0062] AU
Ag = 4.52 [4.48] [0.79σ]
Teffp = 7235 [1677] K [2.35σ]

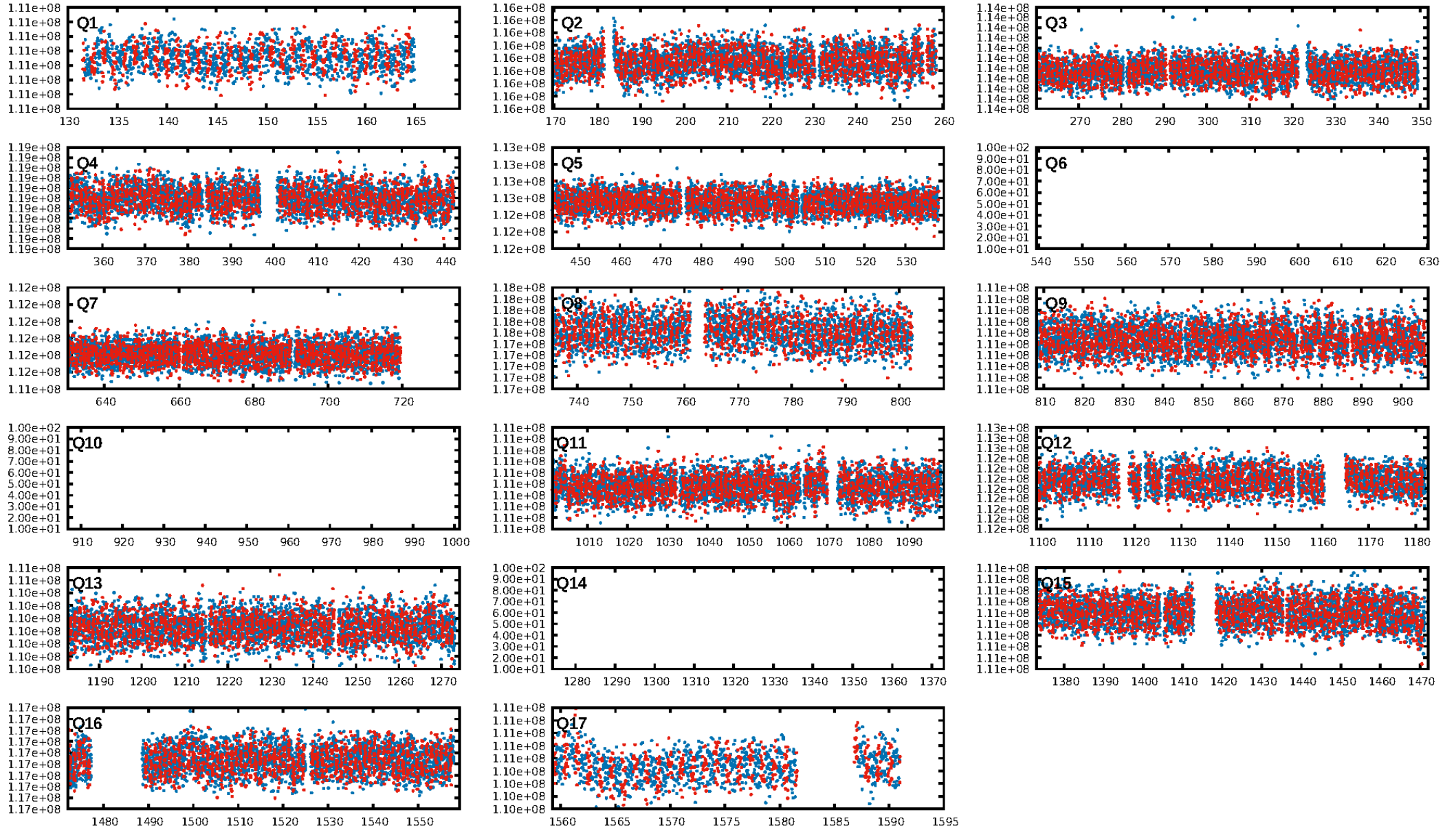
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [376.11σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.03e-10
RollingBand-fgt: 0.98 [934/955]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.535 arcsec [0.91σ]
KicOffset-rm: 0.484 arcsec [0.86σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 1.00 [14/14]

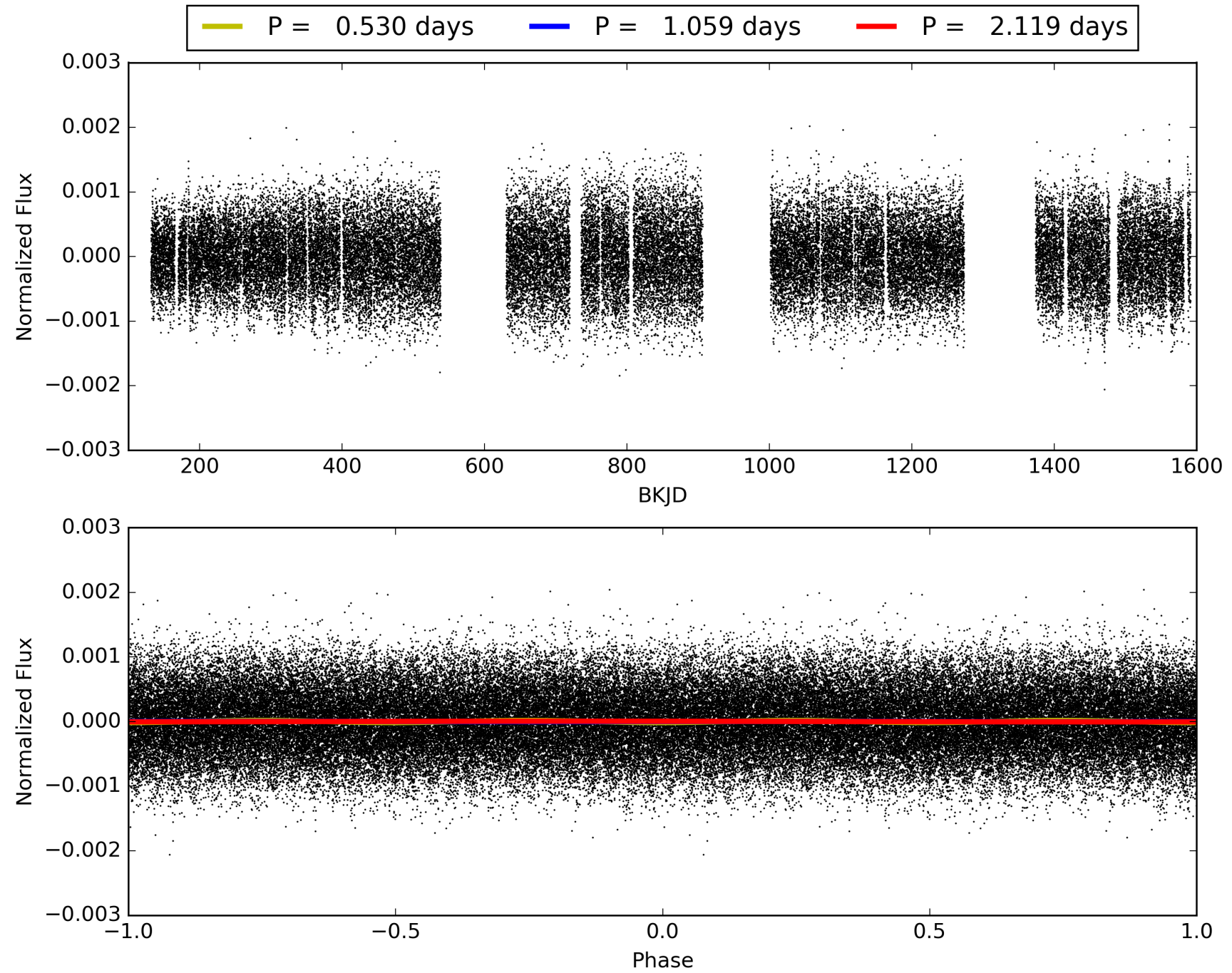
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:56:14 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003868588-01, PDC Light Curves

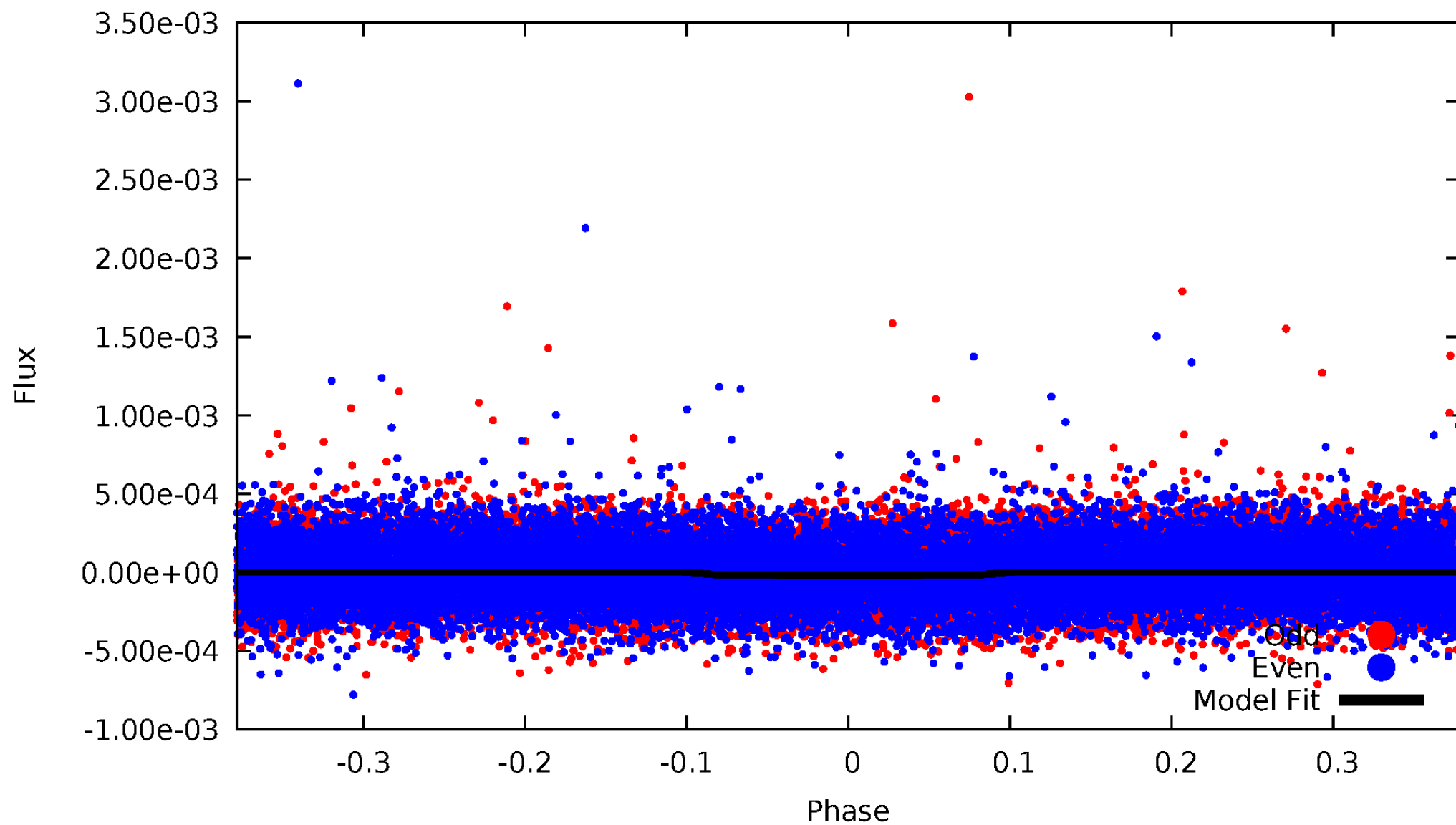


TCE 003868588-01



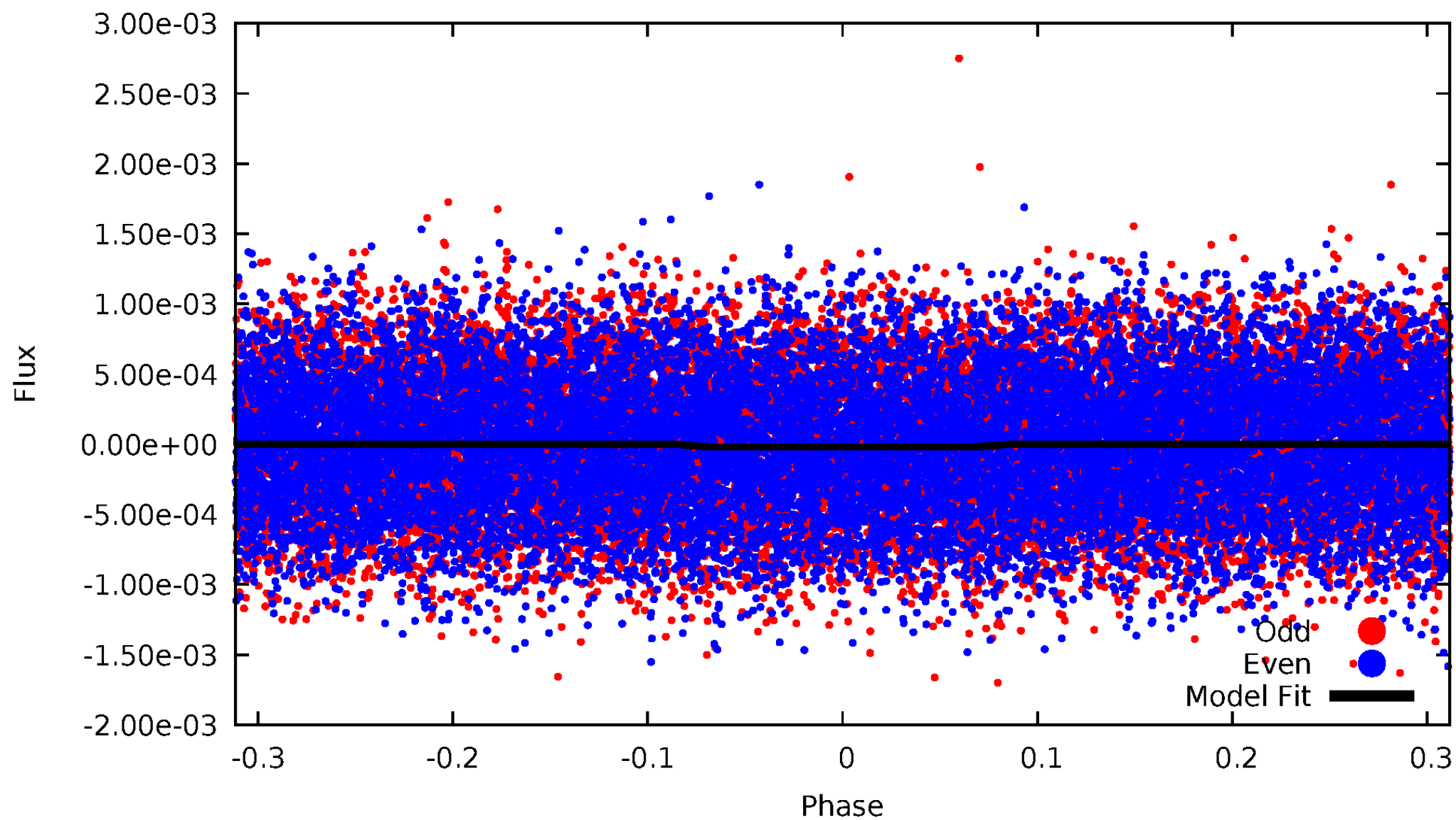
DV Odd/Even

TCE 003868588-01

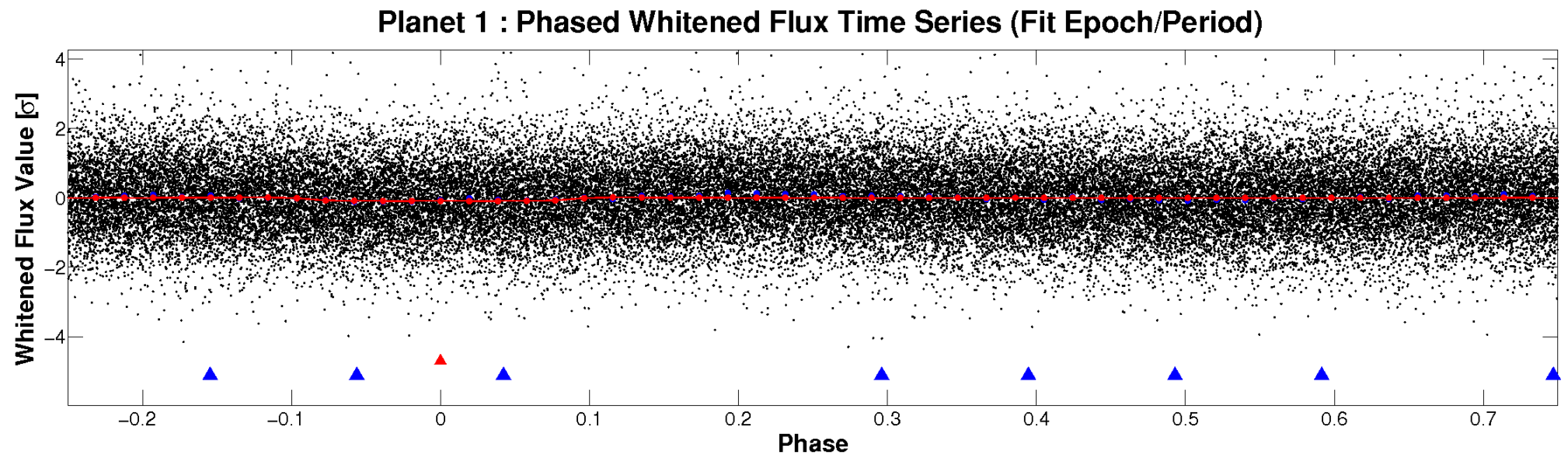
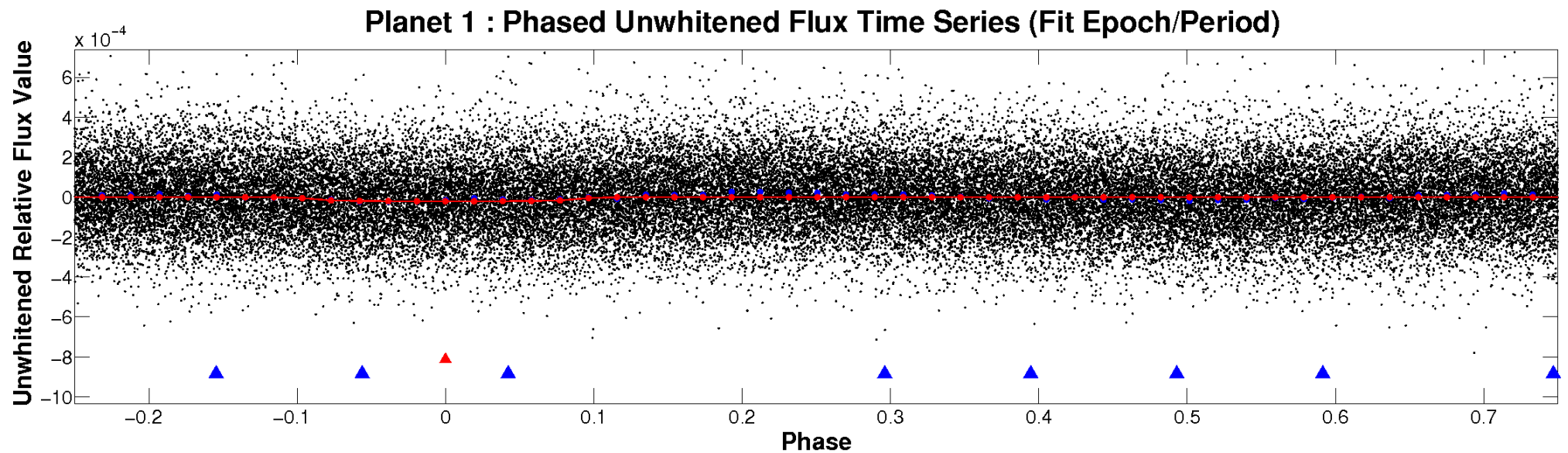


ALT Odd/Even

TCE 003868588-01

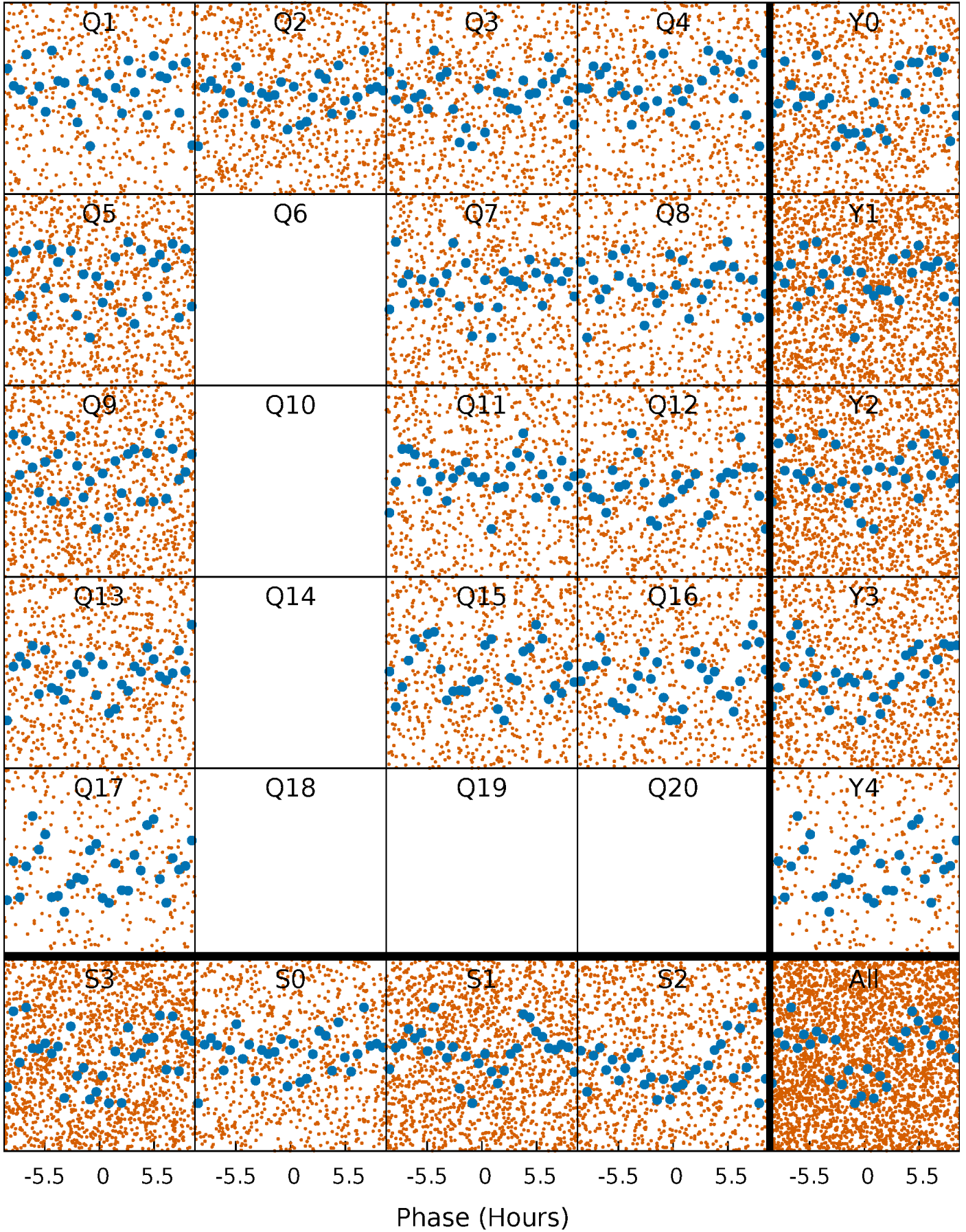


Non-Whitened Vs. Whitened Light Curve



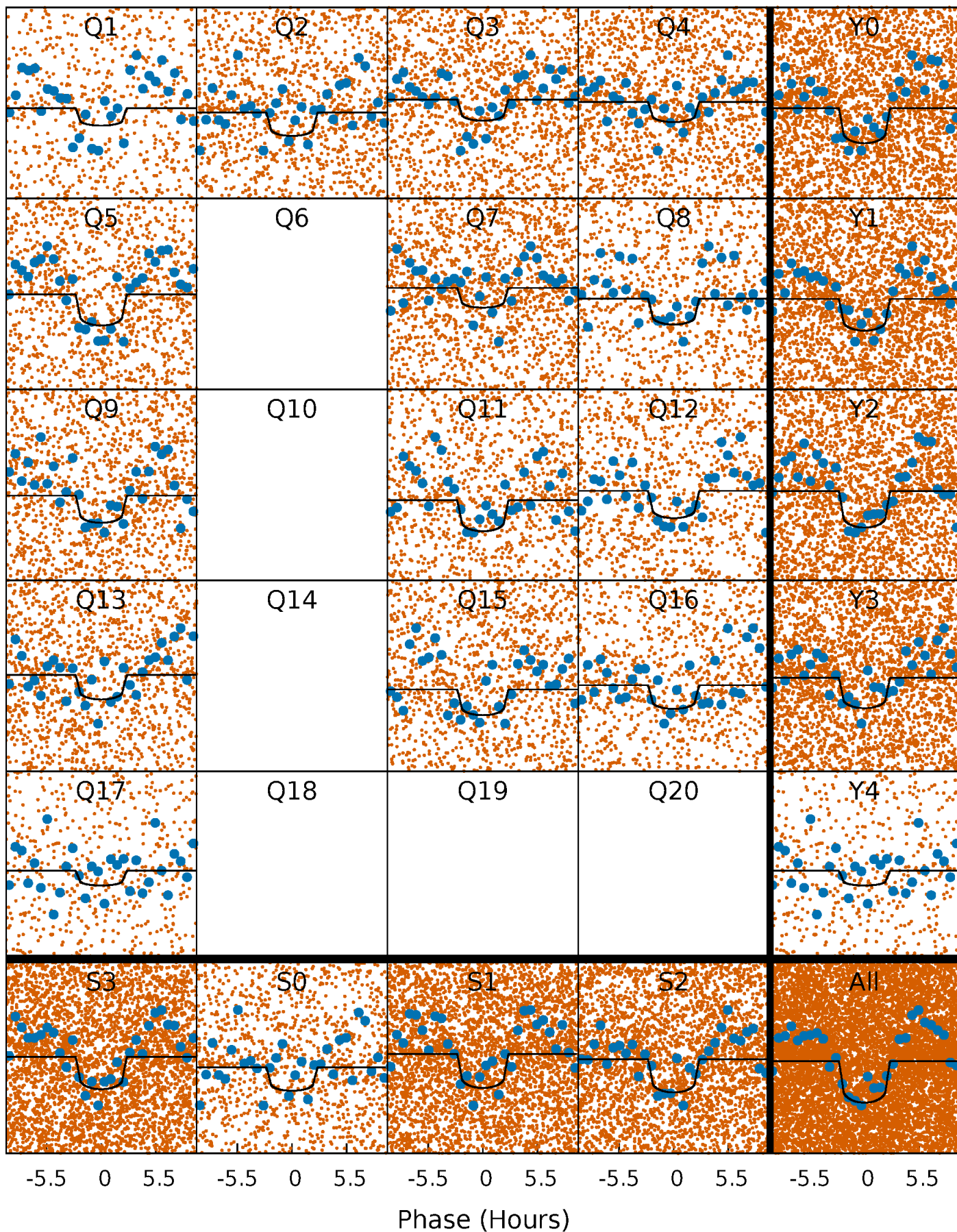
PDC Quarter-Phased Transit Curves

TCE 003868588-01 P= 1.059254 Days $T_0=131.504025$ (BKJD)



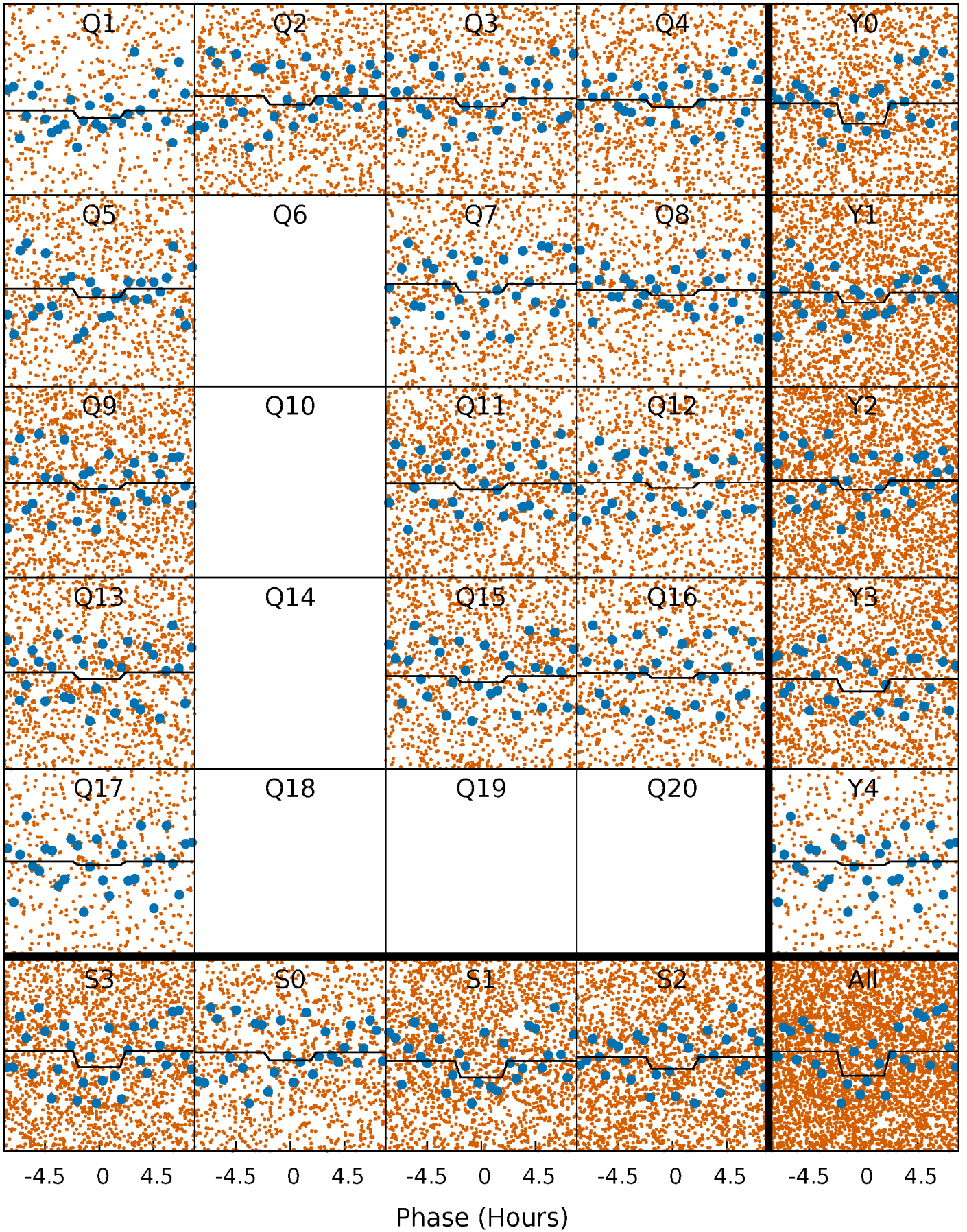
DV Quarter-Phased Transit Curves

TCE 003868588-01 P= 1.059254 Days $T_0=131.504025$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

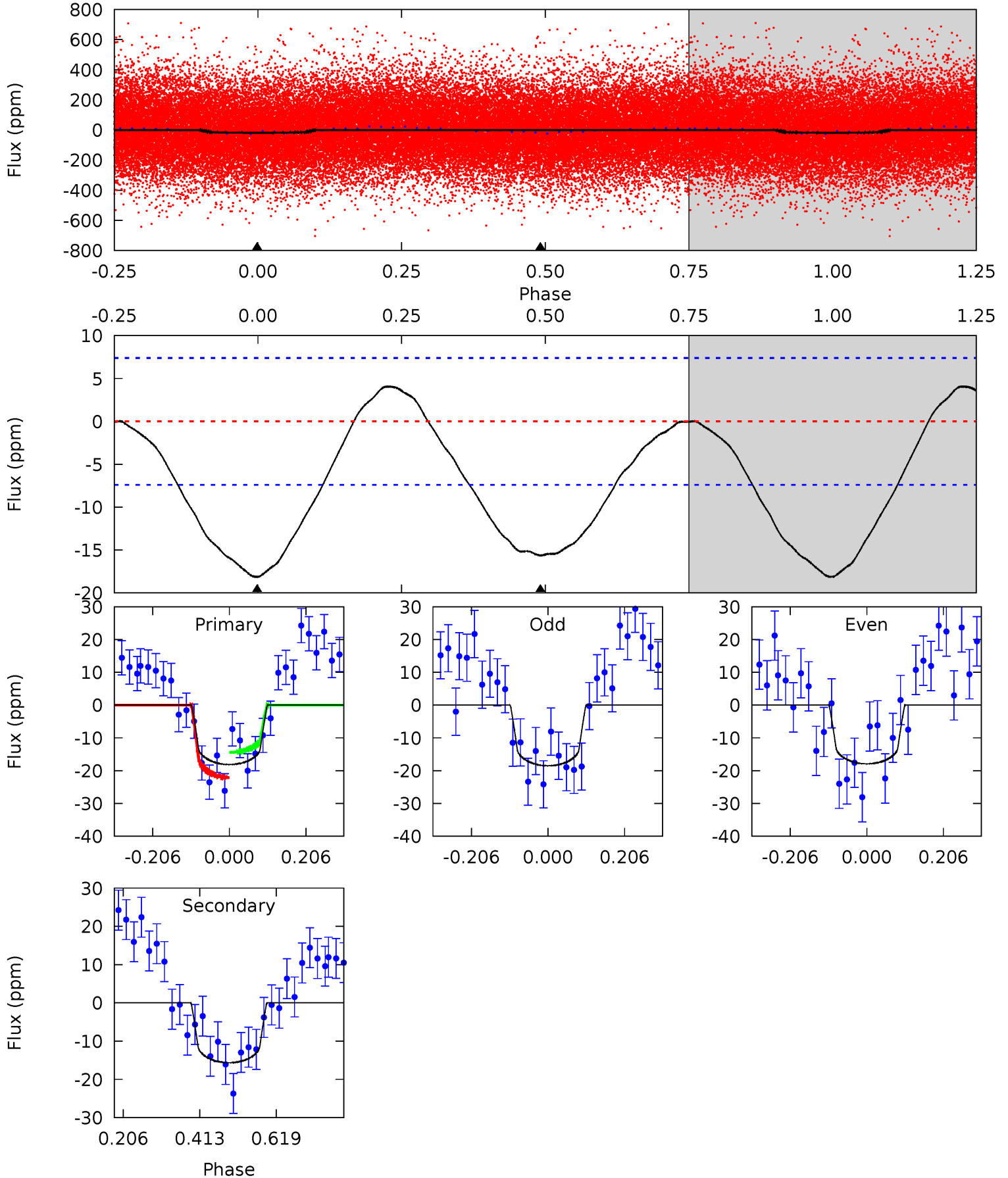
TCE 003868588-01 P= 1.059204 Days $T_0=131.539047$ (BKJD)



DV Model-Shift Uniqueness Test

003868588-01, P = 1.059254 Days, E = 131.504025 Days

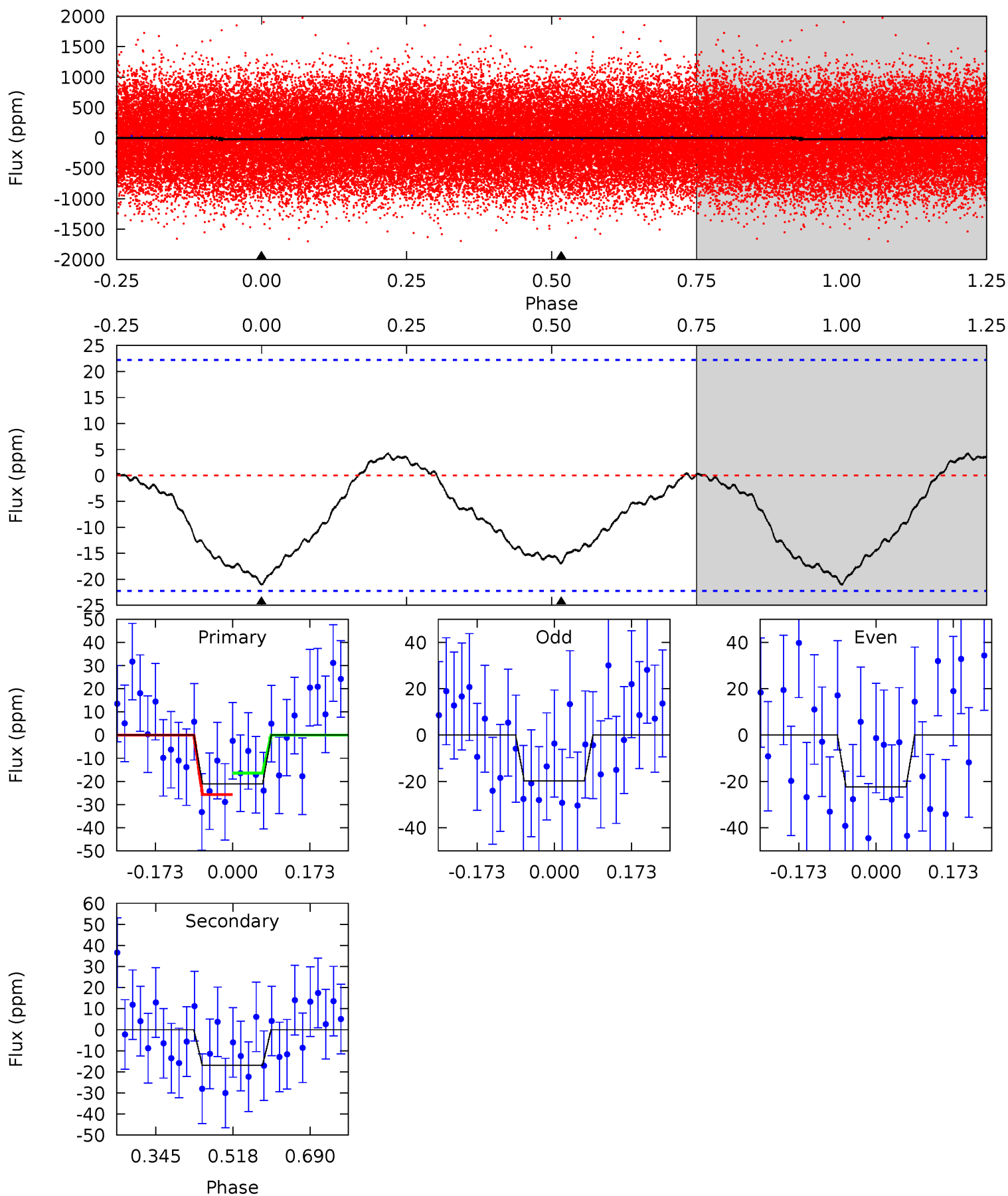
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	9.32	0	0	4.41	1.26	1.20	10.8	10.8	9.32	9.32	0.18	0.92	0.18	2.31



Alt Model-Shift Uniqueness Test

003868588-01, P = 1.059204 Days, E = 130.479843 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.22	3.39	0	0	4.45	1.36	0.51	4.22	4.22	3.39	3.39	0.26	1.12	0.17	0.93



Stellar Parameters For KIC 003868588

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7723^{+237}_{-316}	$4.003^{+0.216}_{-0.144}$	$-0.160^{+0.200}_{-0.350}$	$2.155^{+0.517}_{-0.632}$	$1.703^{+0.198}_{-0.322}$	$0.239^{+0.312}_{-0.103}$
	+3%/-4%	+5%/-4%	+125%/-219%	+24%/-29%	+12%/-19%	+130%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003868588-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16 ± 2	$1.05^{+0.56}_{-0.45}$	4455^{+300}_{-363}	6766^{+3262}_{-1272}	$4.380^{+9.484}_{-2.451}$
Alt.	-17 ± 5	$1.01^{+0.53}_{-0.47}$	4448^{+326}_{-346}	7112^{+4032}_{-1459}	$5.030^{+13.315}_{-2.984}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

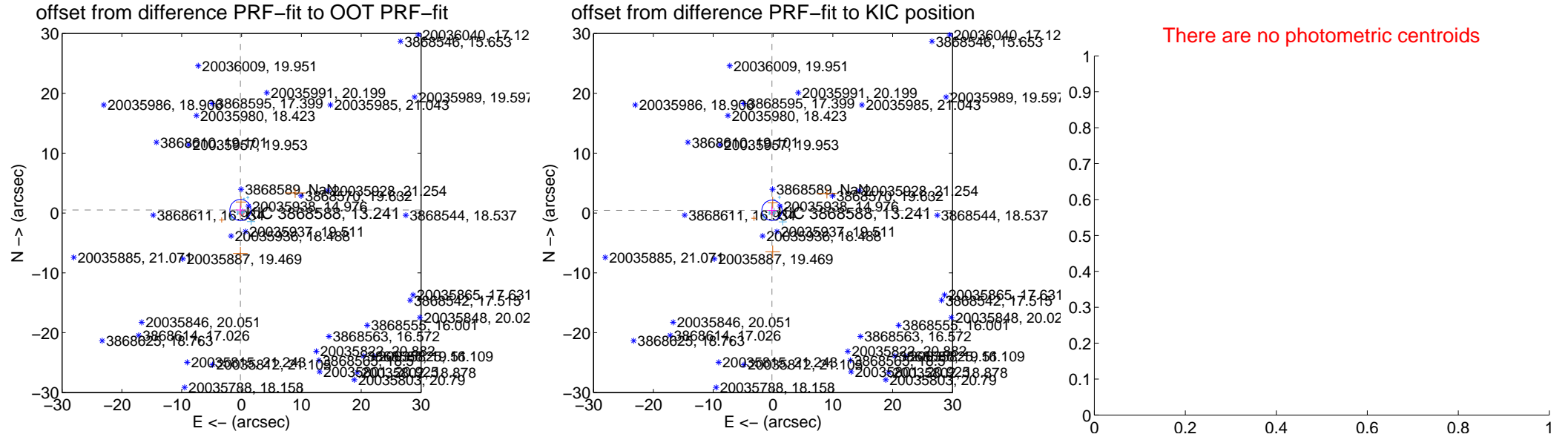
DV Centroid Data

Supplemental centroid analysis for 003868588-01. Kepler magnitude: 13.24. Transit SNR 8.07

There are 9 quarters with good PRF difference image offsets

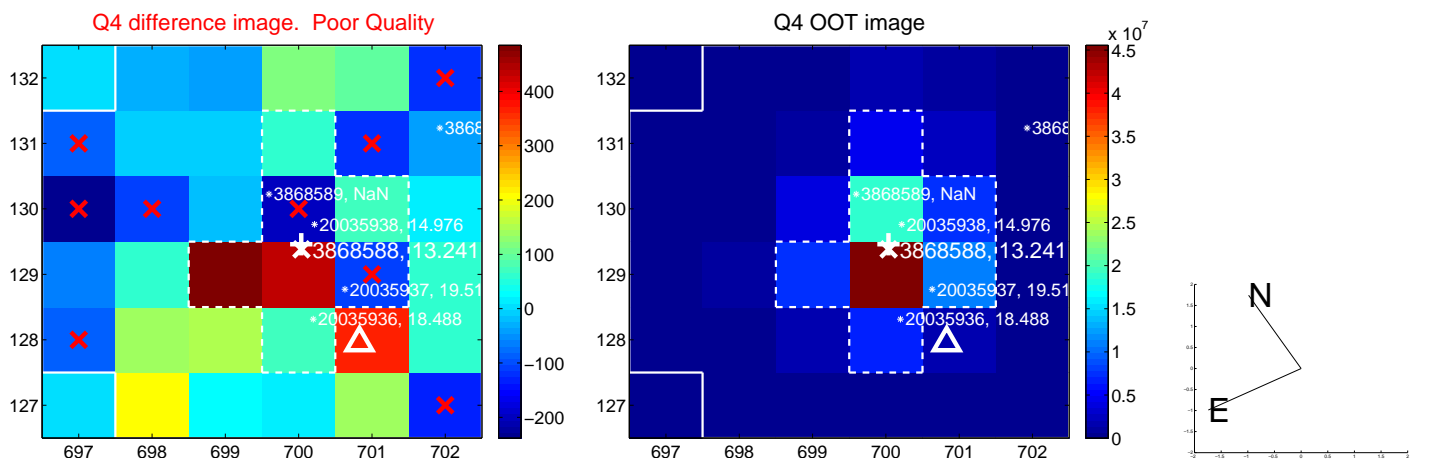
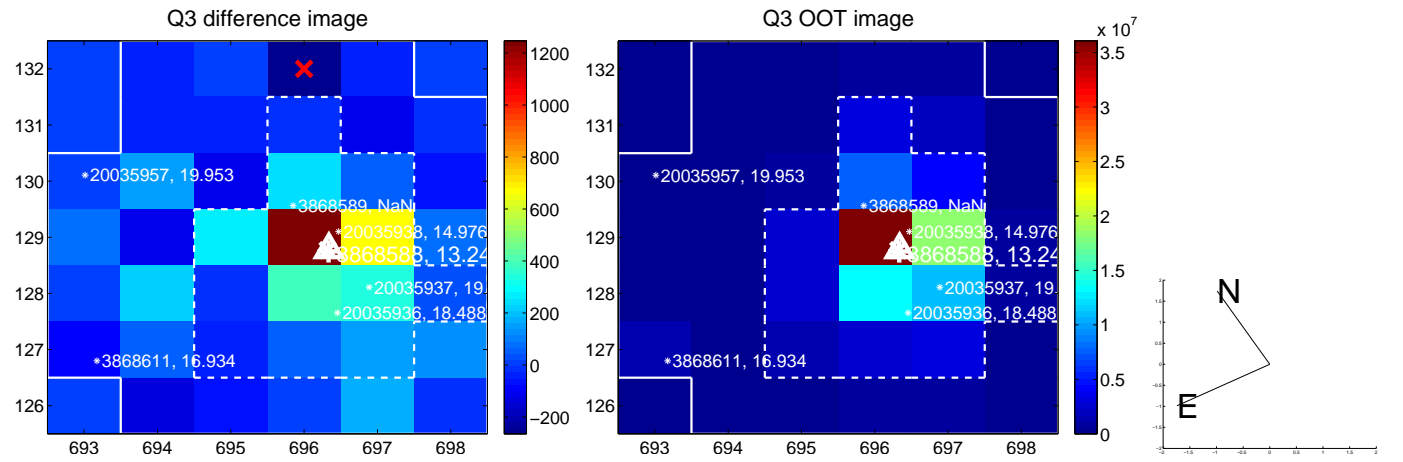
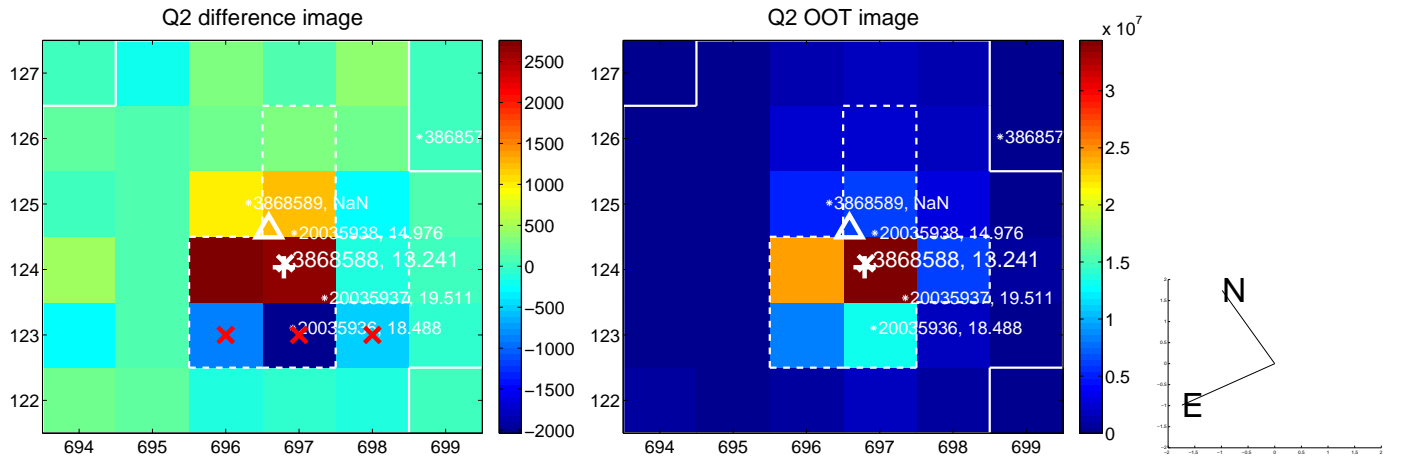
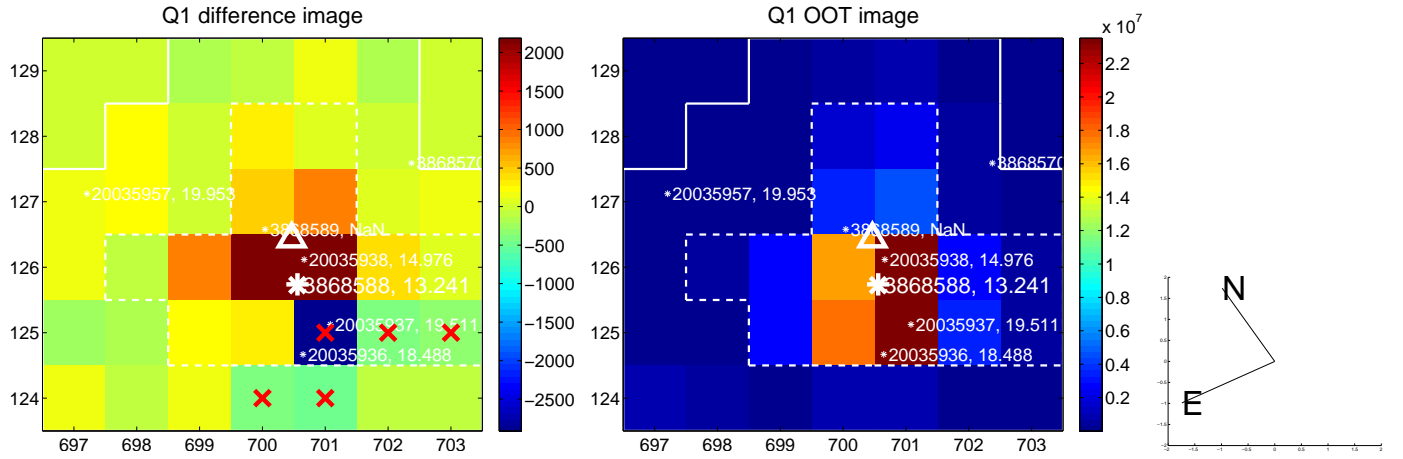
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.535 ± 0.588	0.91	0.187 ± 0.738	0.502 ± 0.670
PRF-fit source offset from KIC position	0.484 ± 0.565	0.86	0.172 ± 0.738	0.452 ± 0.639
photometric centroid source offset	—	—	—	—

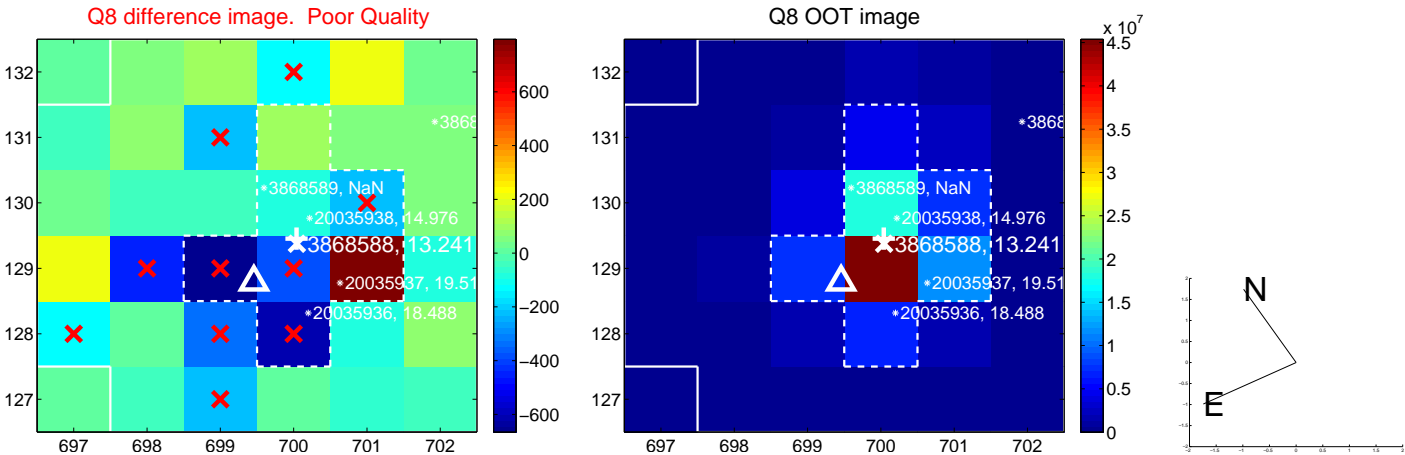
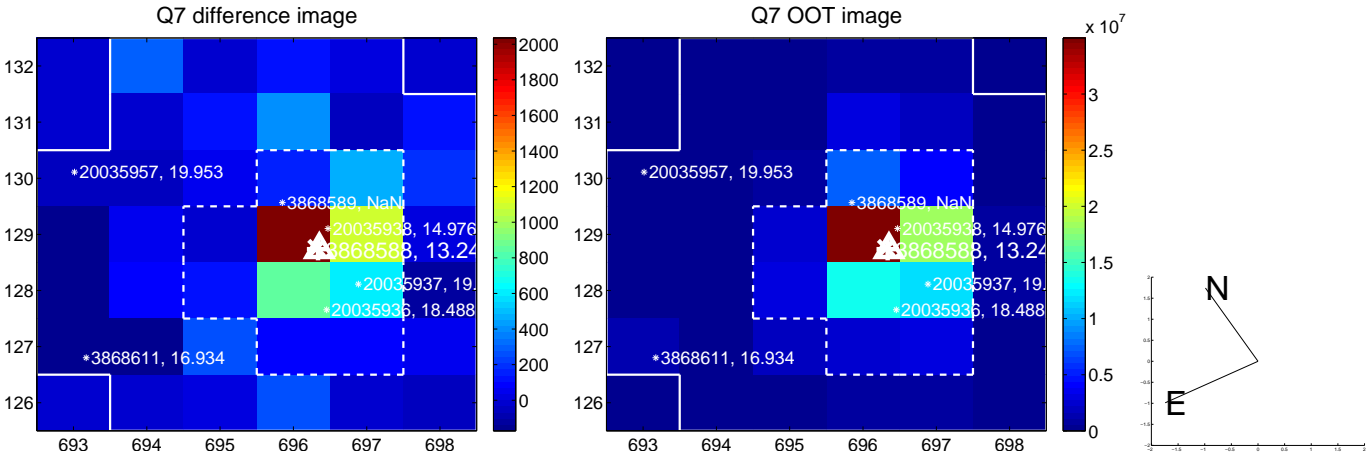
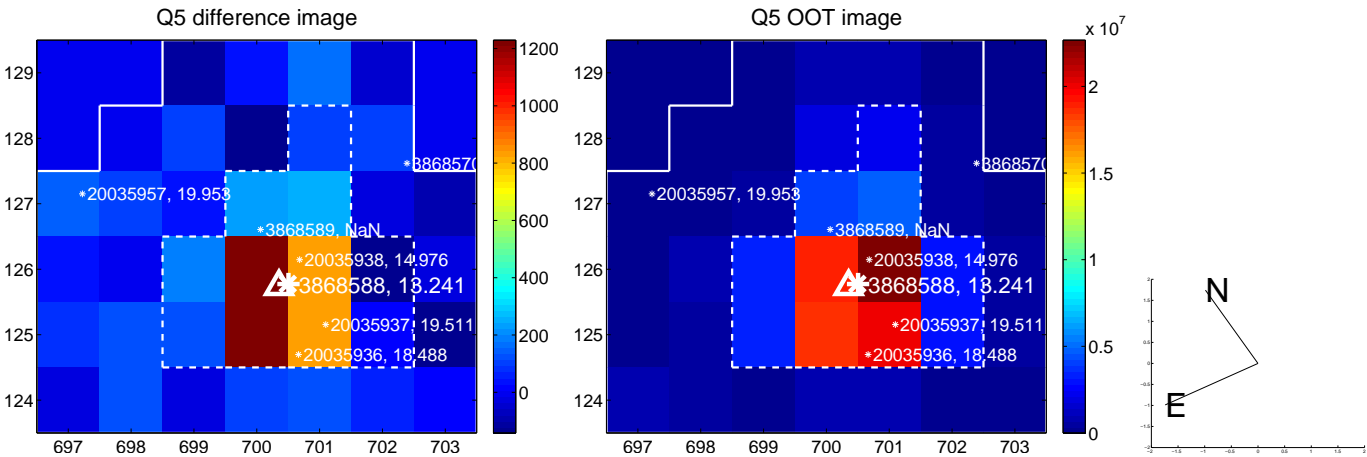


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

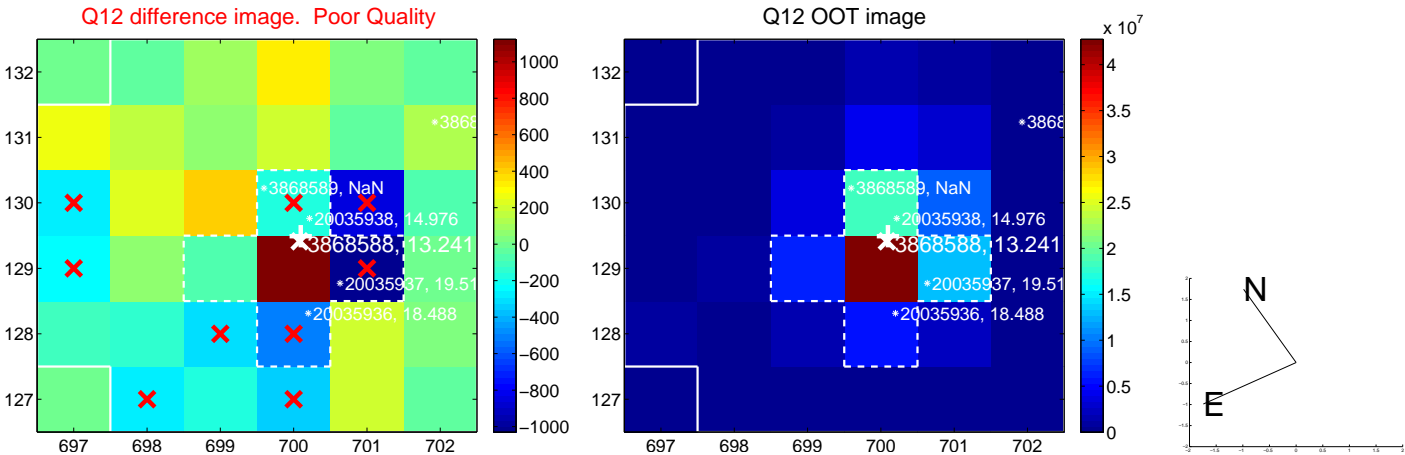
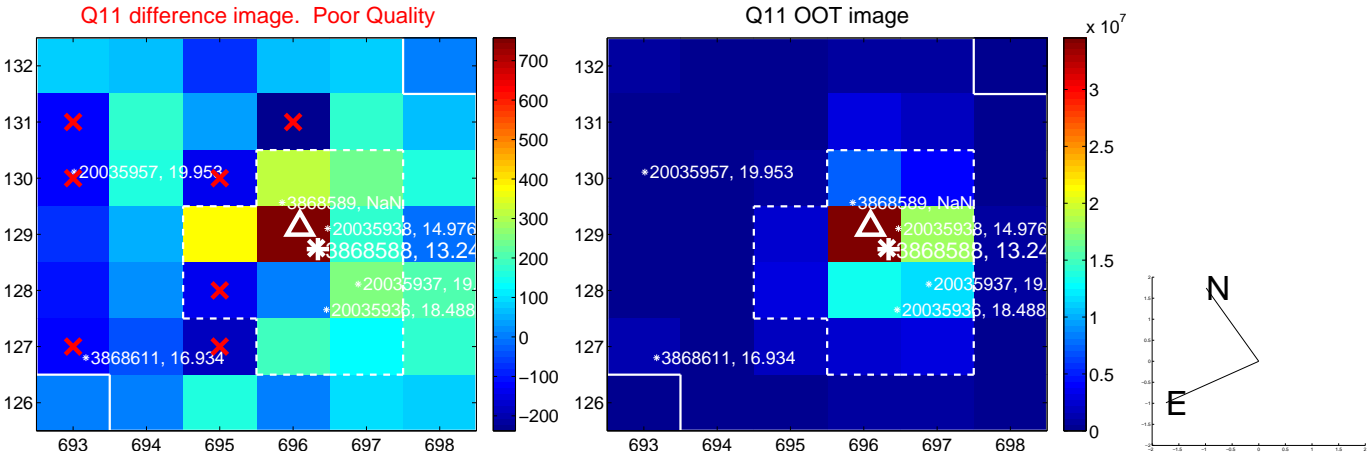
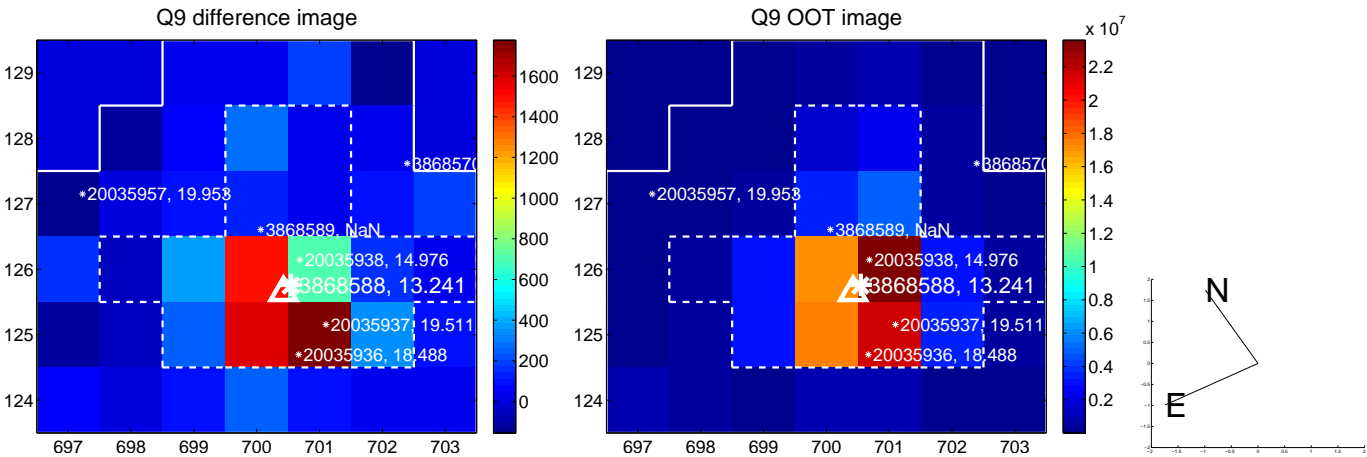
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



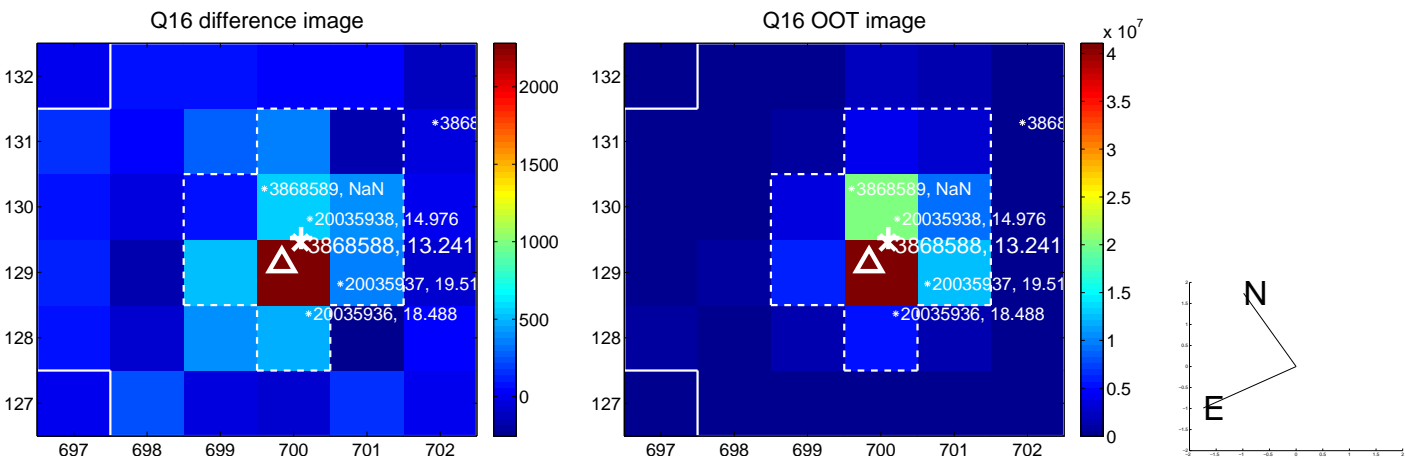
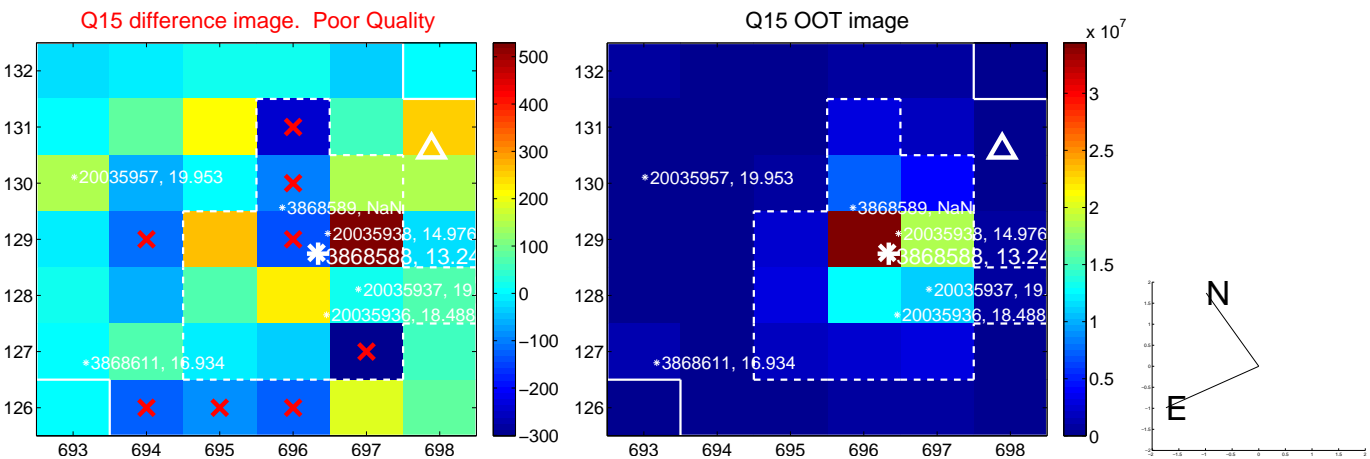
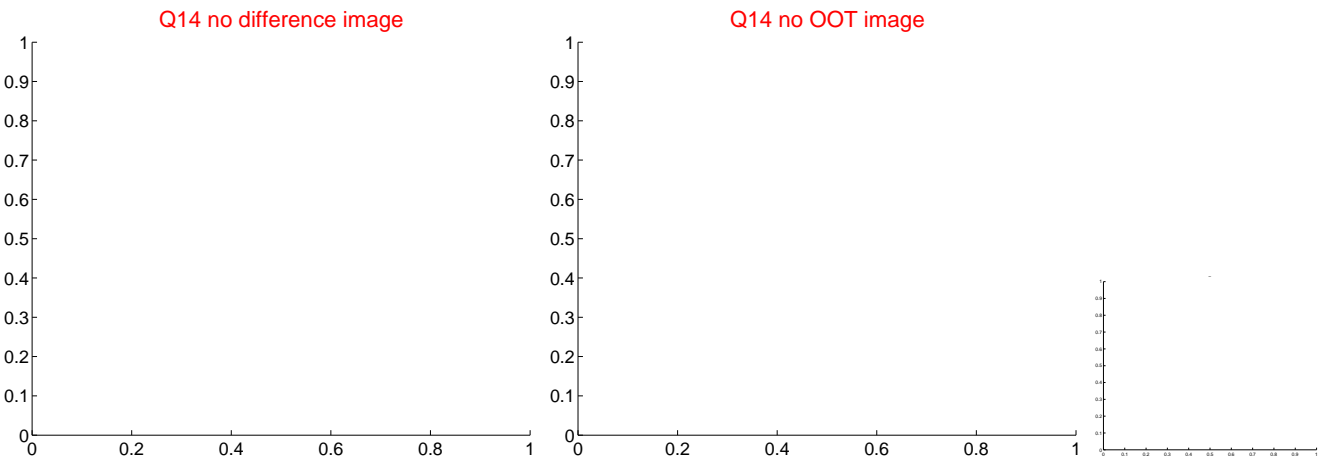
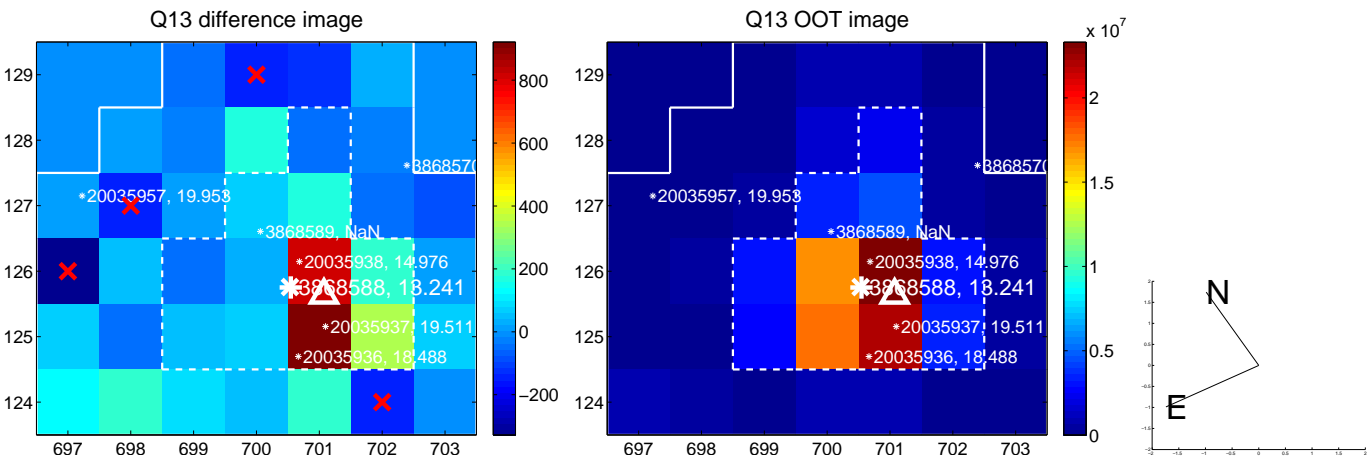
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



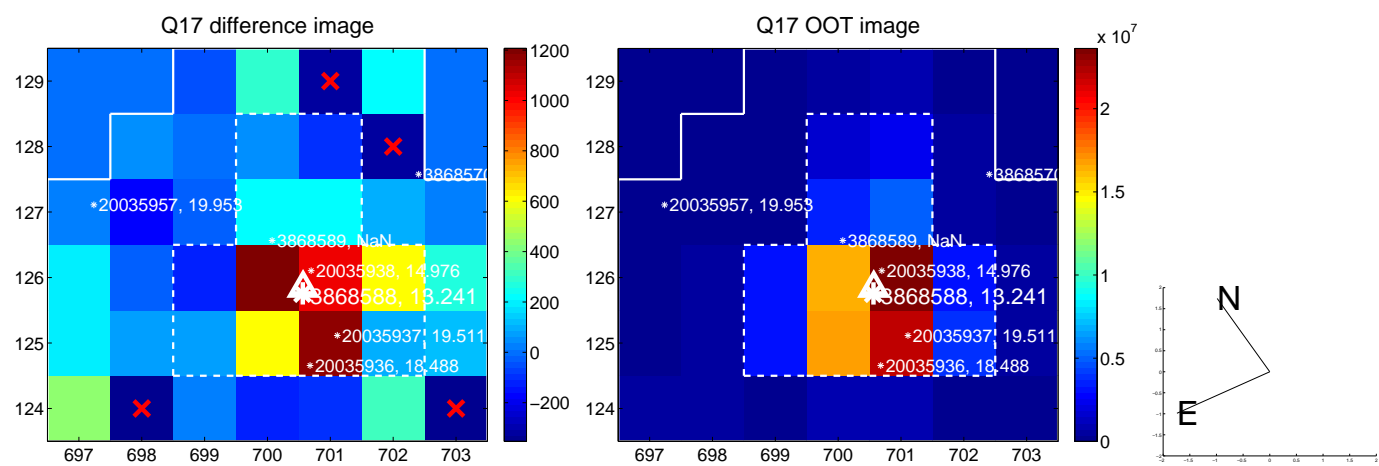
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



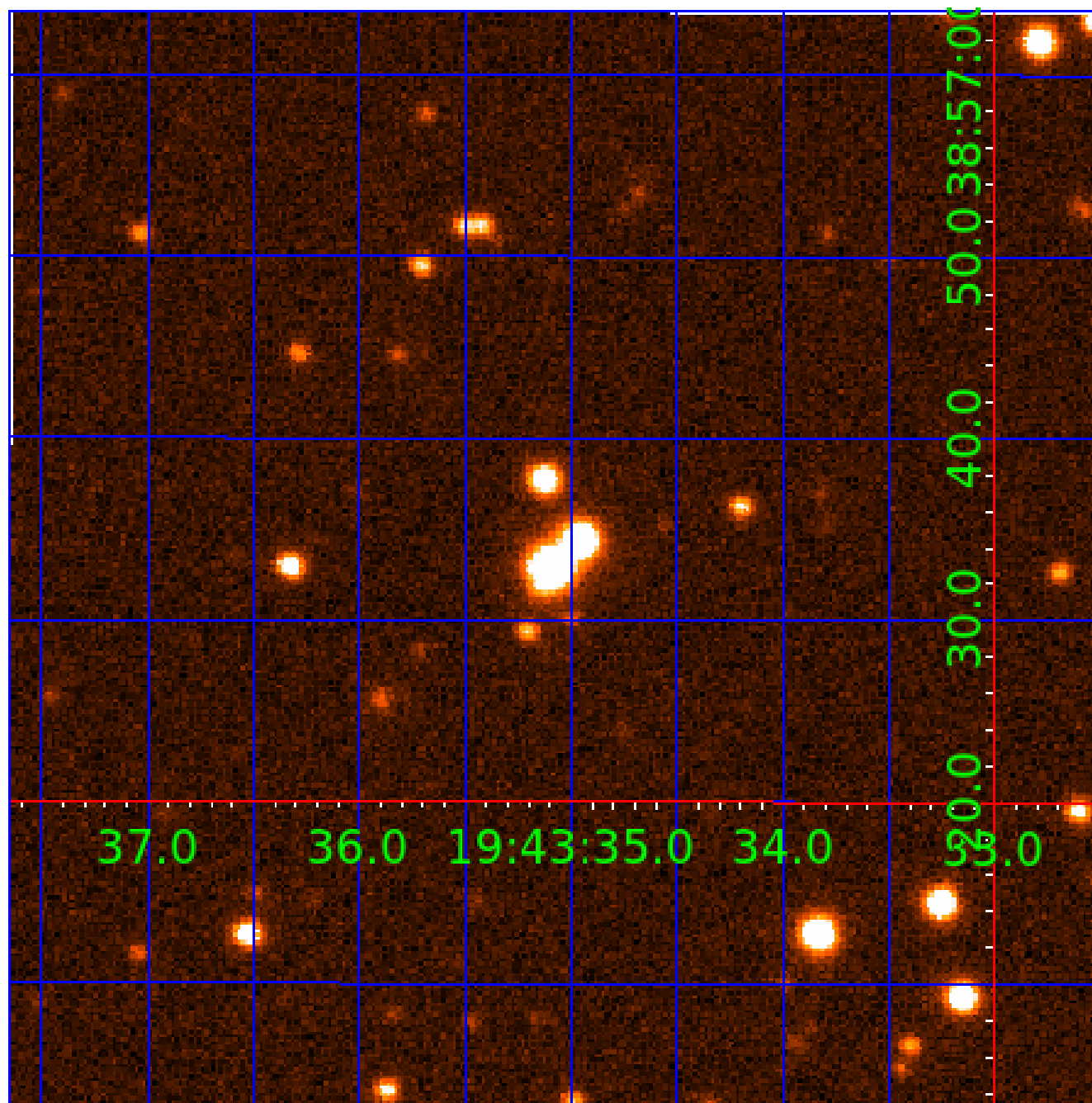
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 003868588

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
003868588-01	OBS	No	1.059254	131.504025	20.7	4.807	7.6	8.1	2.15	7723	1.12	25061.27
003868588-02	OBS	No	185.846983	158.611930	397.9	10.767	12.9	8.7	2.15	7723	4.69	25.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003868588-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
003868588-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

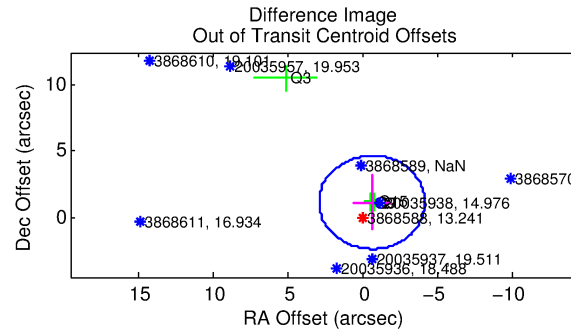
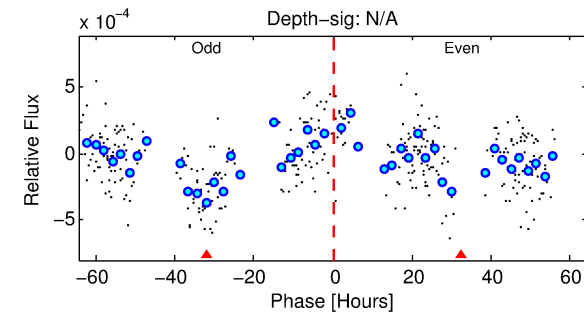
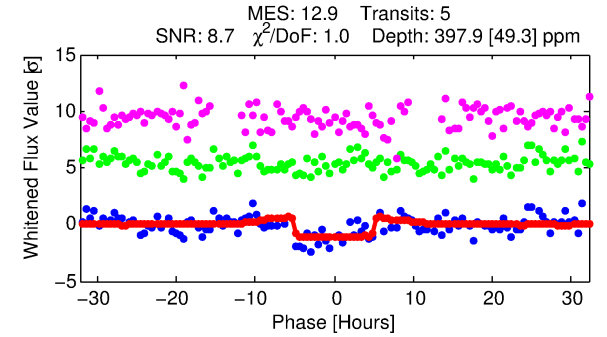
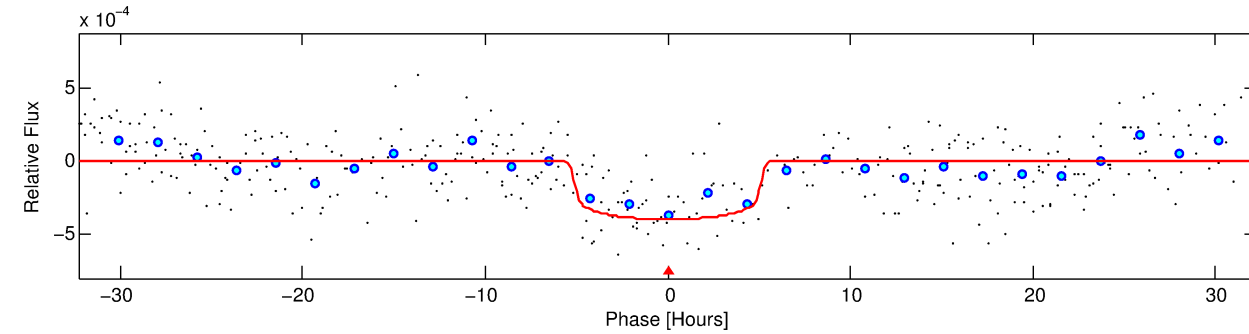
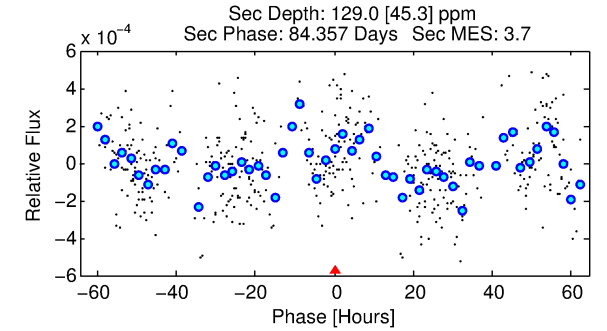
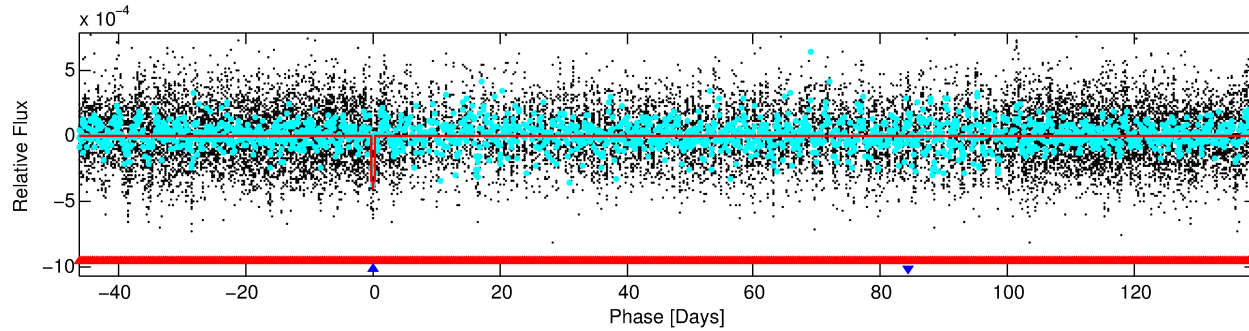
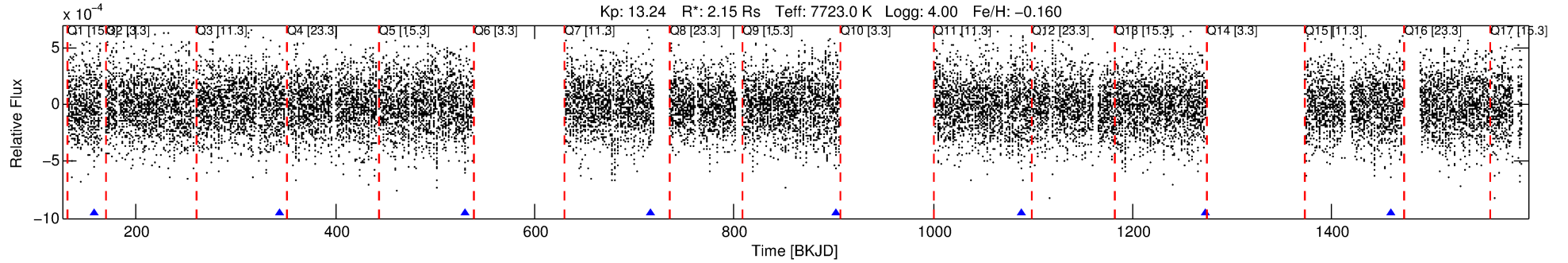
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003868588-02

No Significant Match Found

DV One-Page Summary

KIC: 3868588 Candidate: 2 of 2 Period: 185.847 d



DV Fit Results:

Period = 185.84698 [0.00341] d
Epoch = 158.6119 [0.0142] BKJD
Rp/R* = 0.0199 [0.0067]
a/R* = 88.91 [164.70]
b = 0.77 [1.00]
Seff = 25.52 [10.67]
Teq = 573 [60] K
Rp = 4.69 [2.08] Re
a = 0.7617 [0.1952] AU
Ag = 1873.38 [1587.56] [1.18σ]
Teffp = 5829 [1126] K [4.66σ]

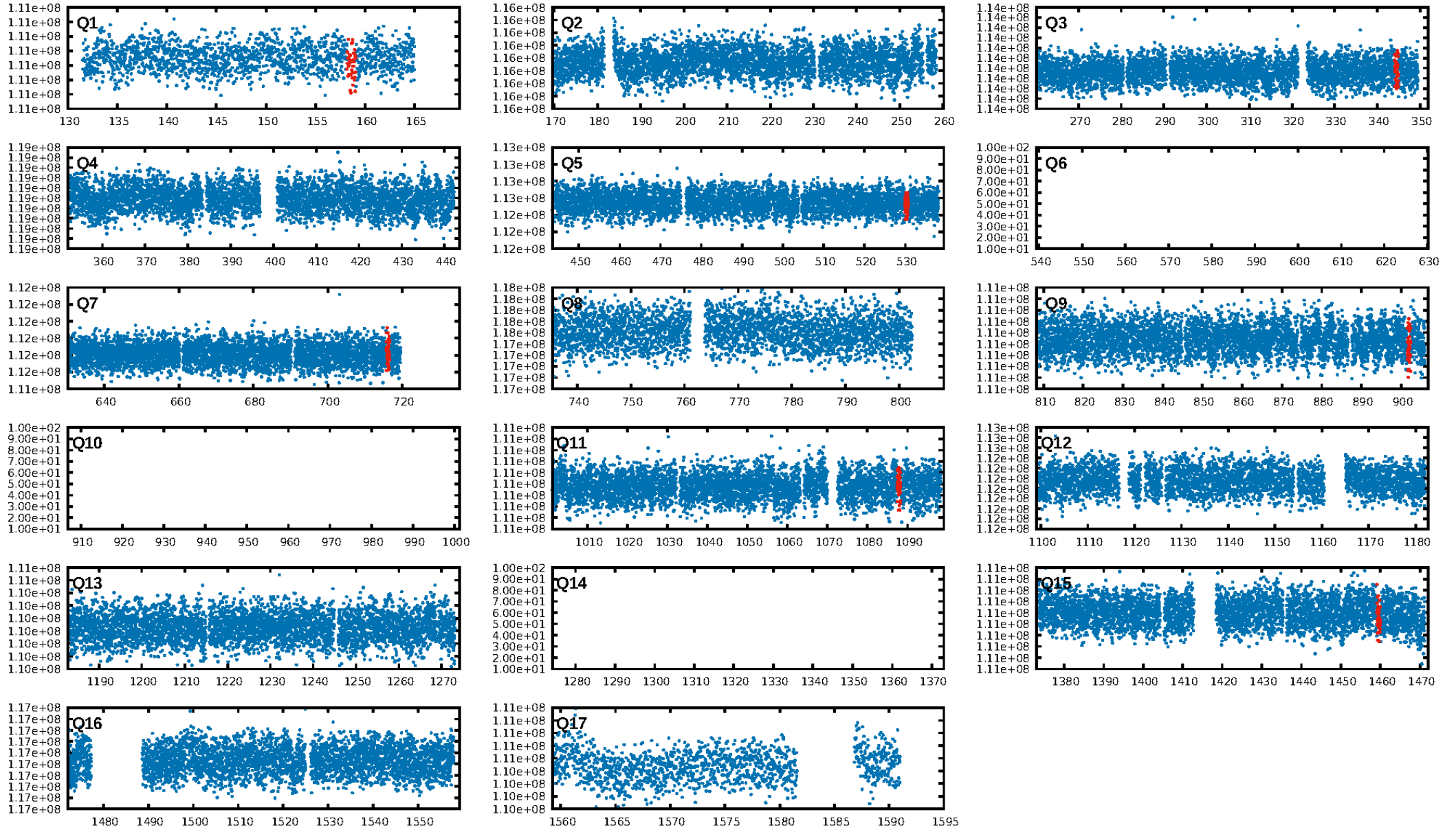
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [376.11σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.56e-26
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.809
Centroid-sig: 91.1%
Centroid-so: 0.183 arcsec [0.25σ]
OotOffset-rm: 1.325 arcsec [1.13σ]
OotOffset-st: 0/3/0/1 [4]
KicOffset-rm: 1.332 arcsec [1.40σ]
KicOffset-st: 0/3/0/1 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.00 [0/7]

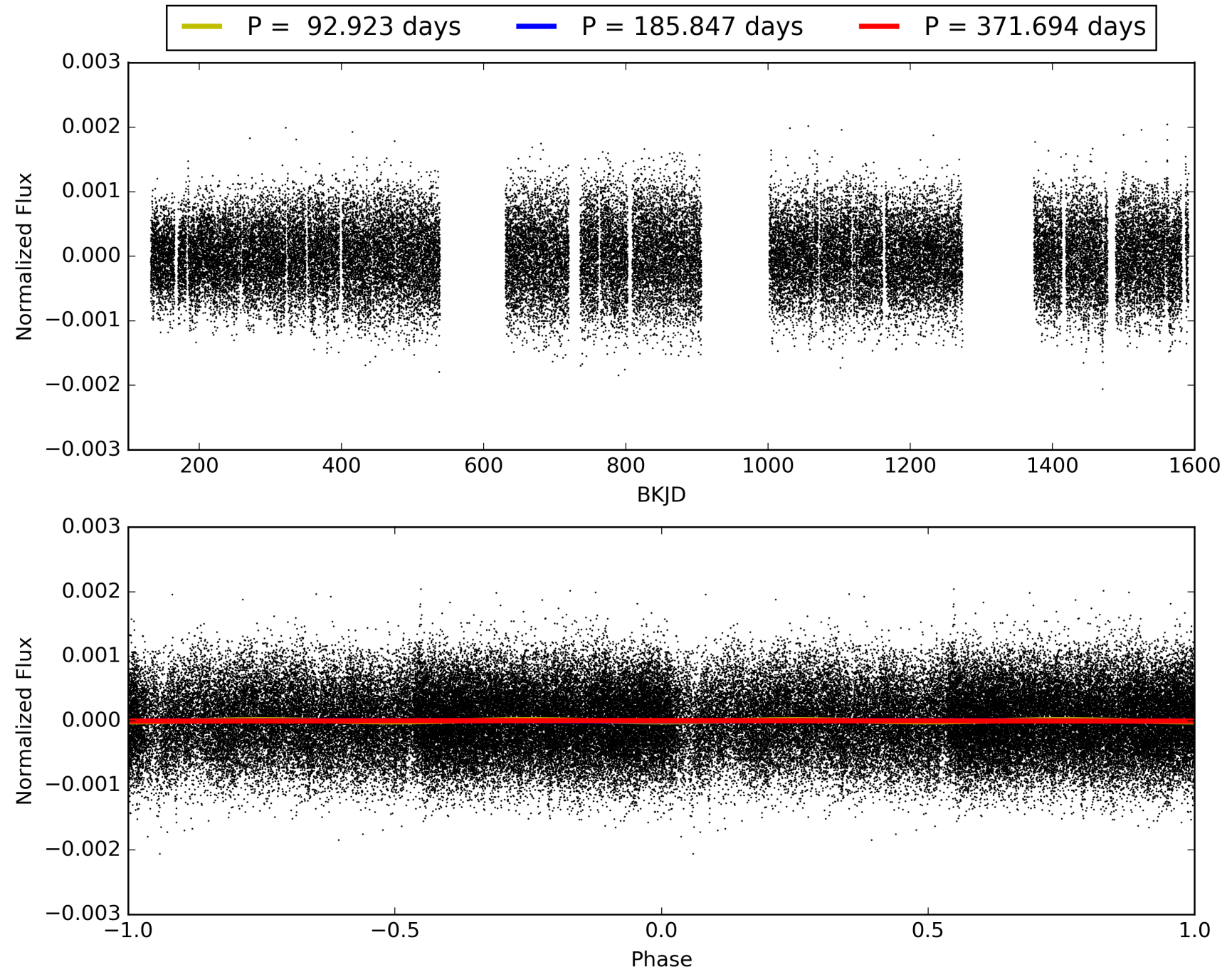
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:56:24 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003868588-02, PDC Light Curves

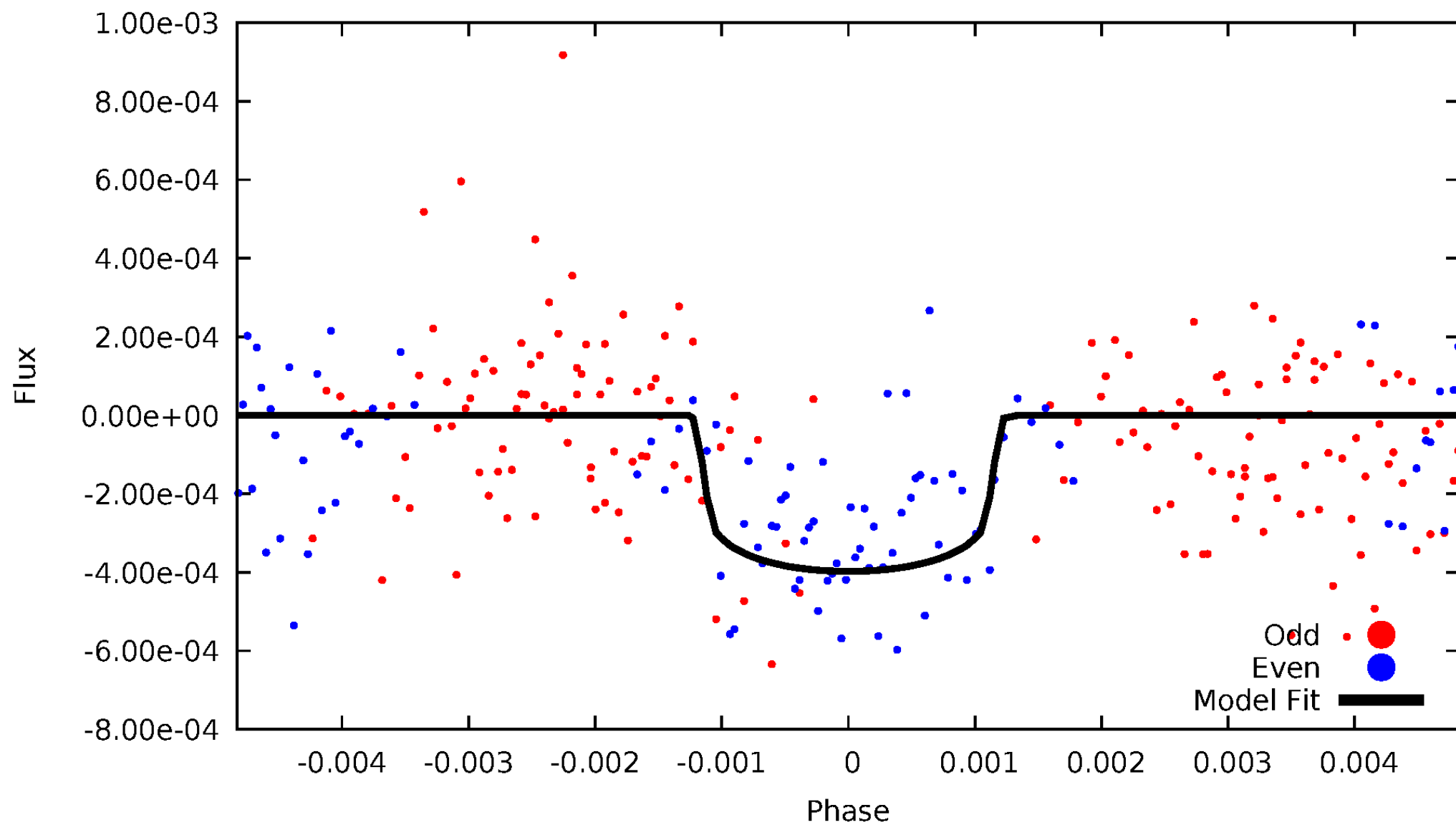


TCE 003868588-02



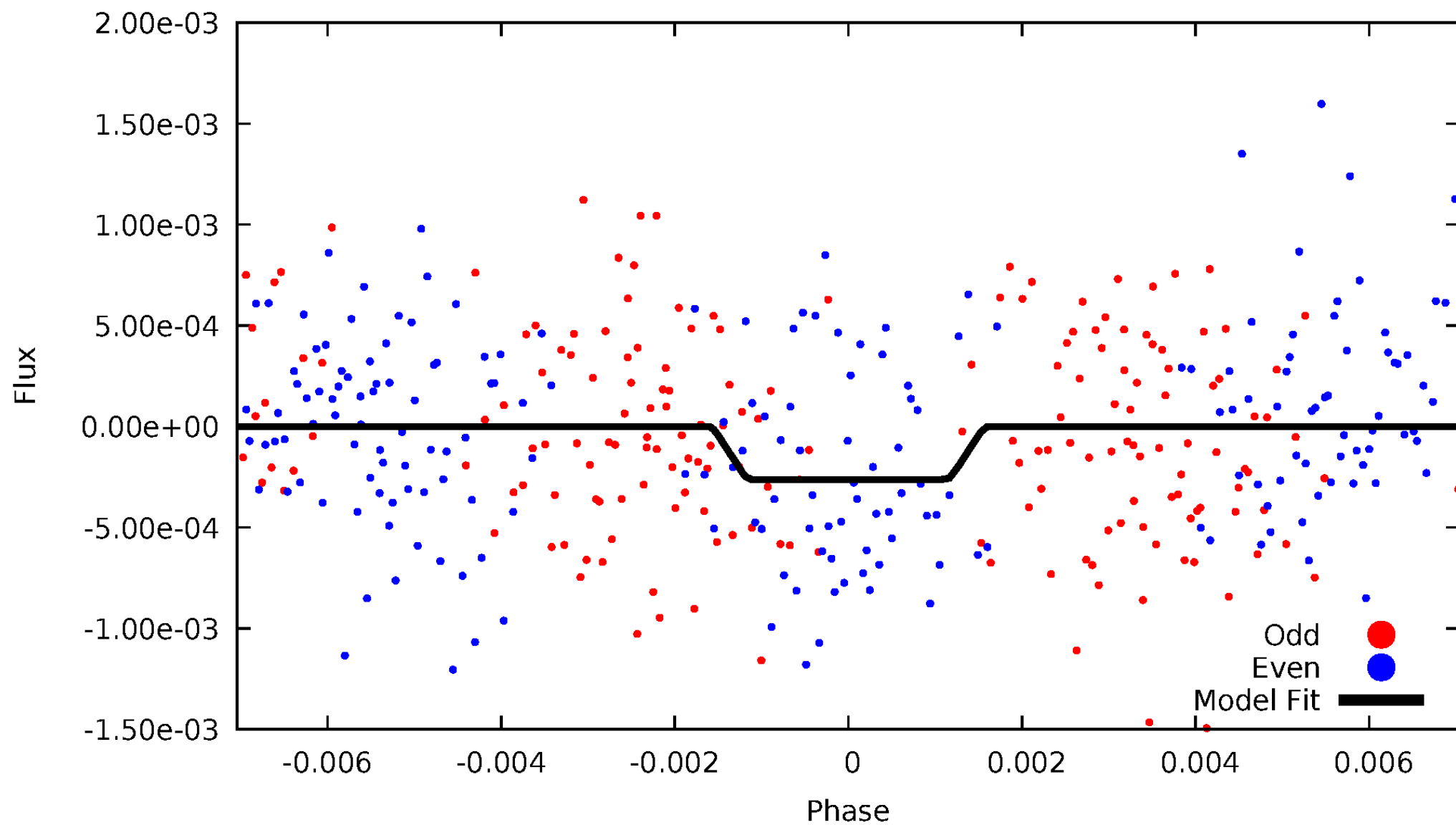
DV Odd/Even

TCE 003868588-02



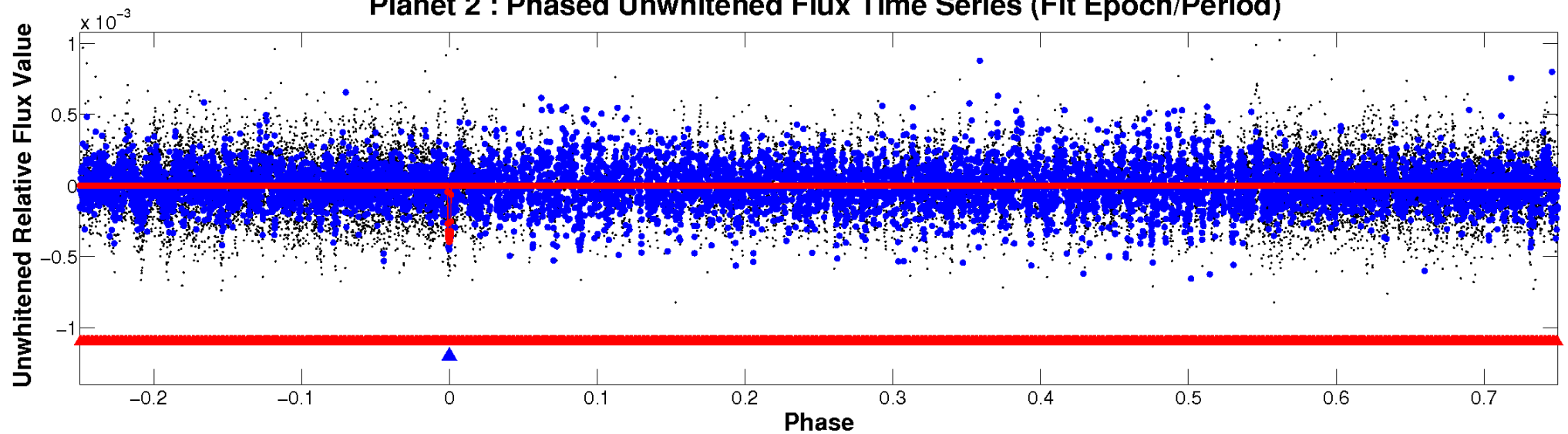
ALT Odd/Even

TCE 003868588-02

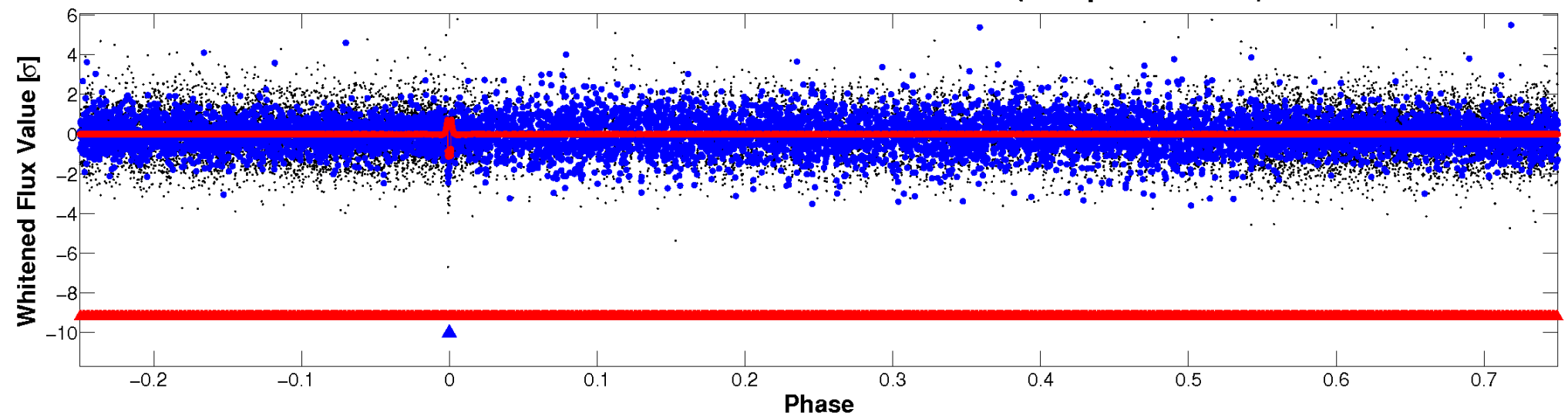


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

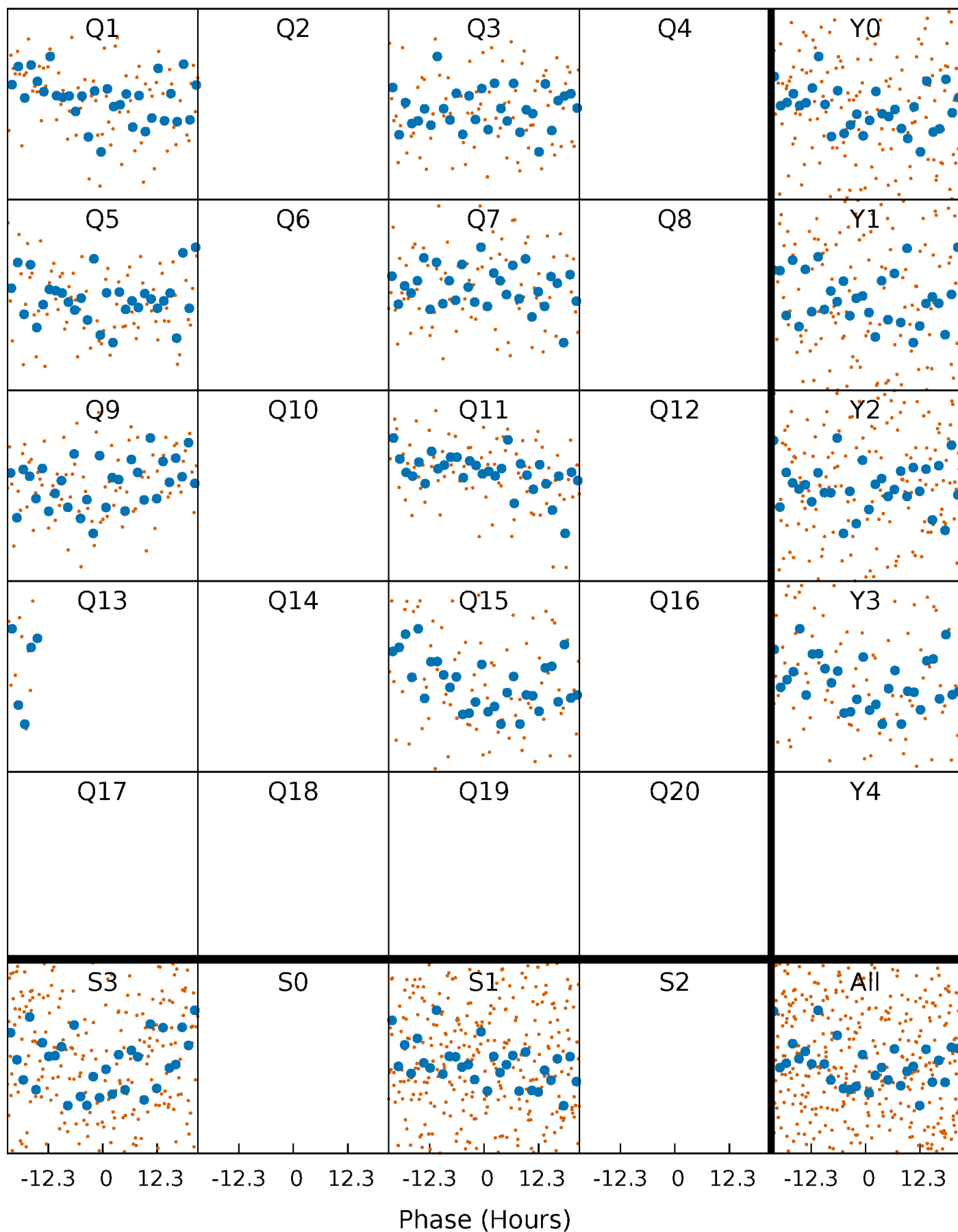


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



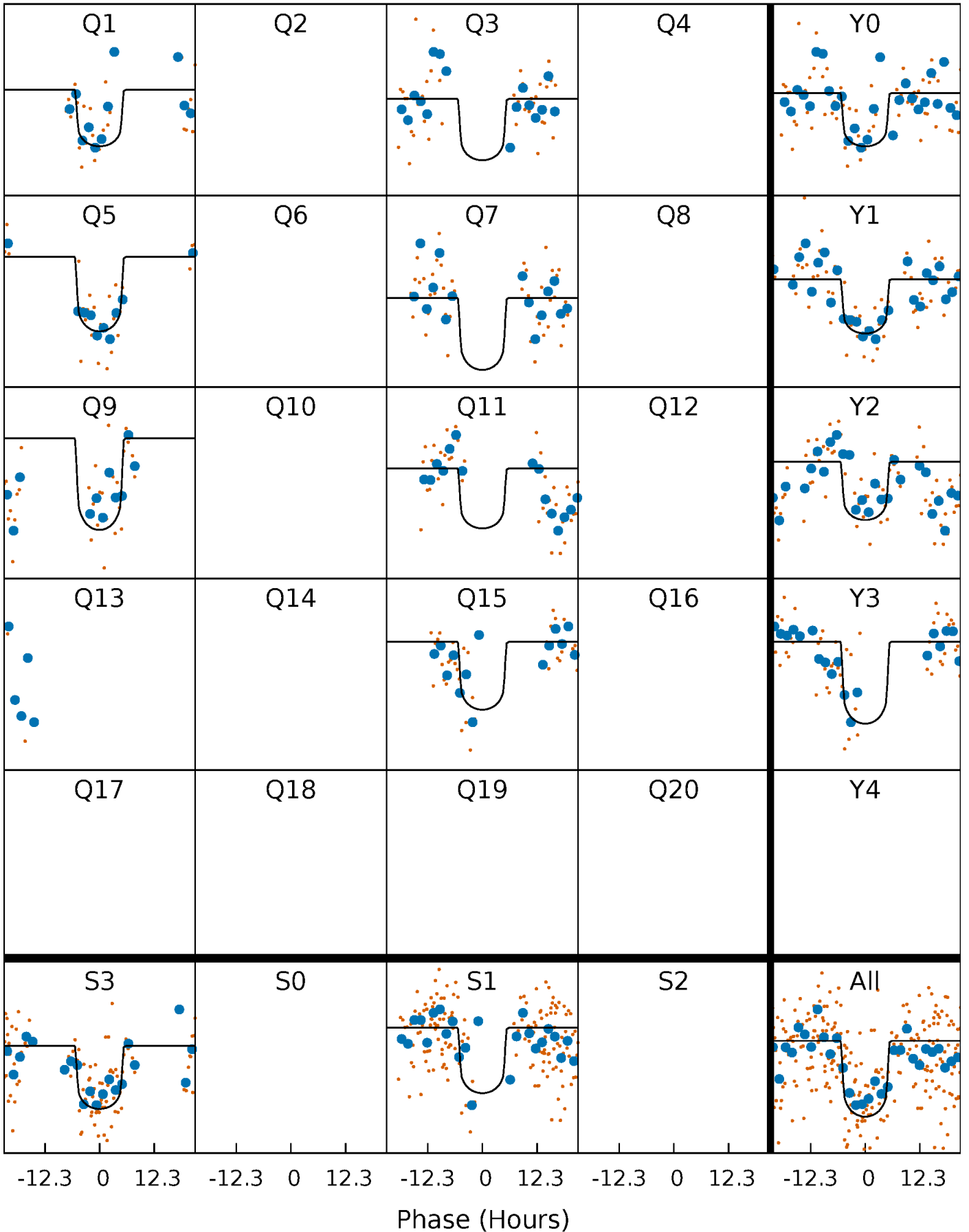
PDC Quarter-Phased Transit Curves

TCE 003868588-02 P=185.846983 Days $T_0=158.611930$ (BKJD)



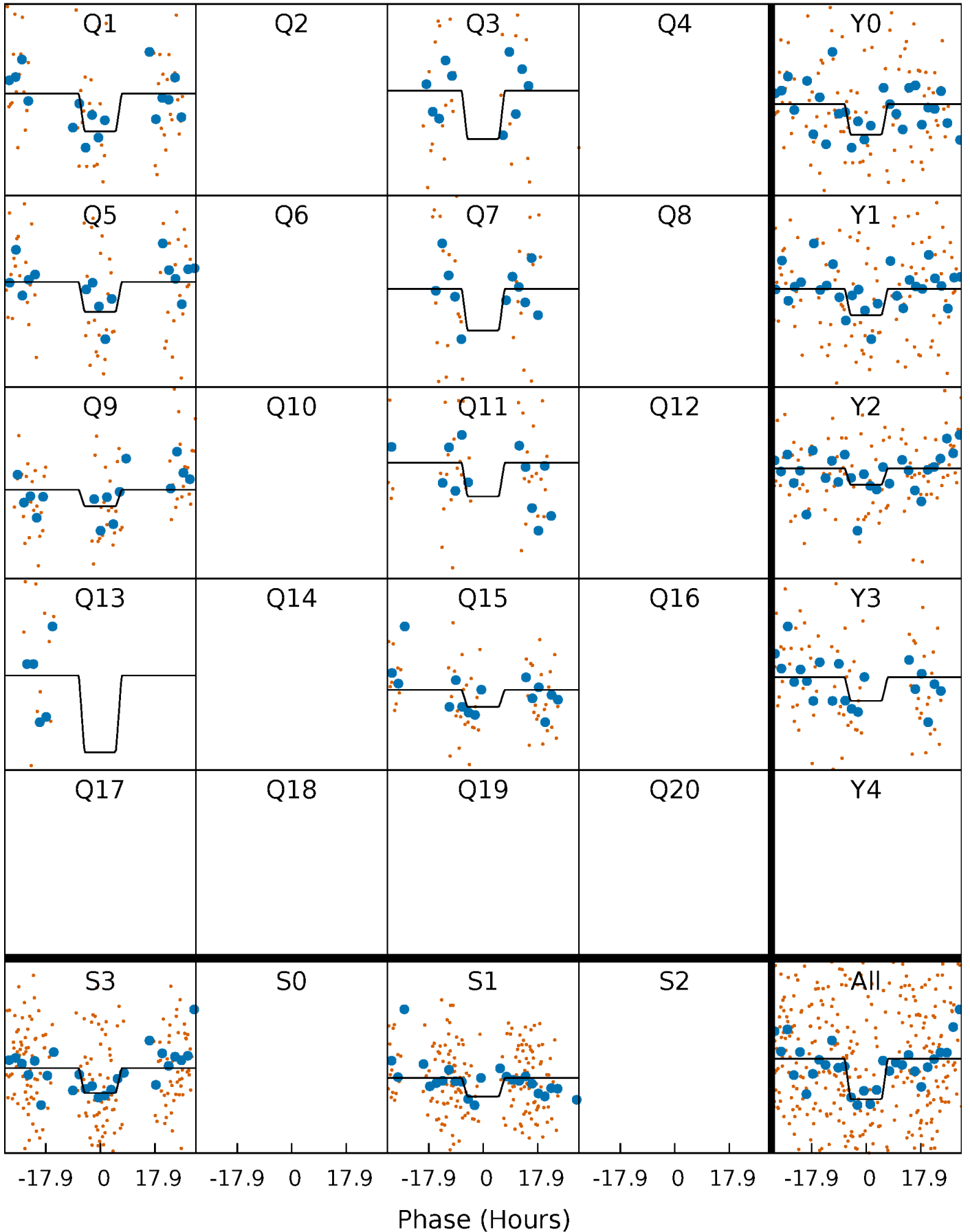
DV Quarter-Phased Transit Curves

TCE 003868588-02 $P=185.846983$ Days $T_0=158.611930$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

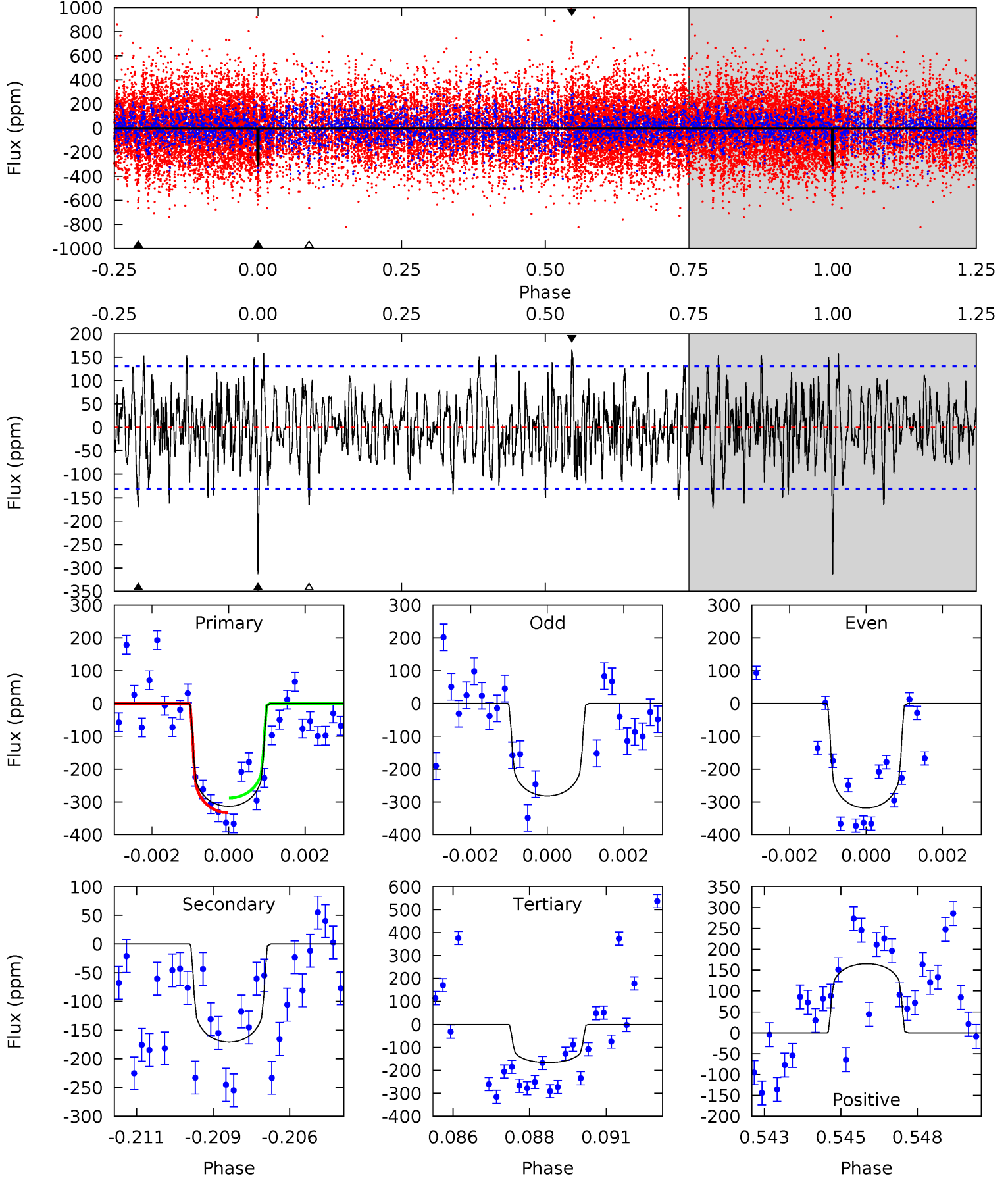
TCE 003868588-02 P=185.840318 Days $T_0=158.650830$ (BKJD)



DV Model-Shift Uniqueness Test

003868588-02, P = 185.846983 Days, E = 158.611930 Days

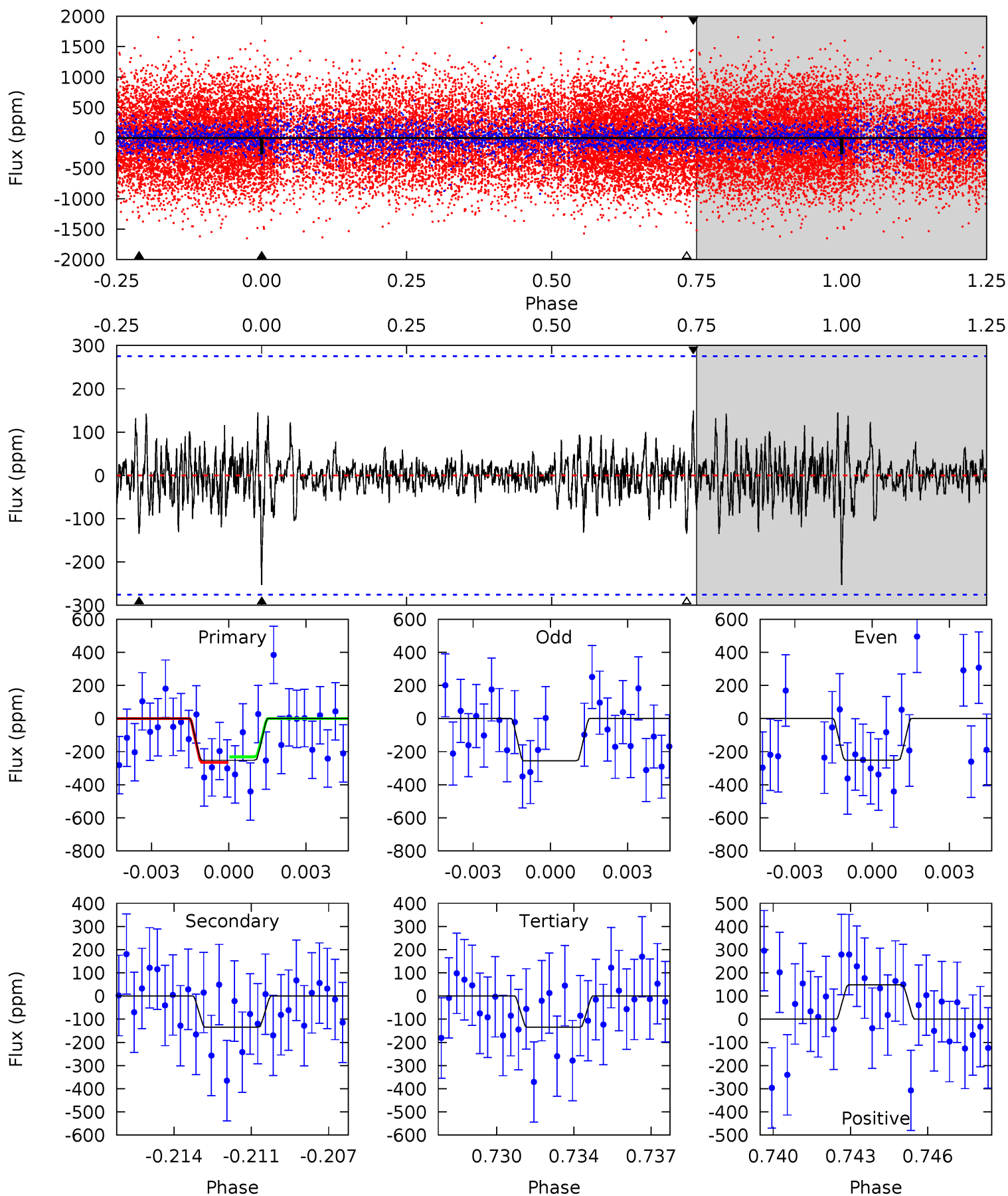
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	6.91	6.72	6.70	5.29	3.03	2.30	5.98	6.00	0.20	0.21	0.58	0.90	0.35	0.91



Alt Model-Shift Uniqueness Test

003868588-02, P = 185.840318 Days, E = 158.650830 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.81	2.57	2.57	2.82	5.24	2.95	0.74	2.24	1.98	0.00	-0.25	0.04	0.79	0.37	0.31



Stellar Parameters For KIC 003868588

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7723^{+237}_{-316}	$4.003^{+0.216}_{-0.144}$	$-0.160^{+0.200}_{-0.350}$	$2.155^{+0.517}_{-0.632}$	$1.703^{+0.198}_{-0.322}$	$0.239^{+0.312}_{-0.103}$
	+3%/-4%	+5%/-4%	+125%/-219%	+24%/-29%	+12%/-19%	+130%/-43%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003868588-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-171 ± 25	$4.60^{+1.79}_{-1.62}$	797^{+54}_{-68}	6116^{+1539}_{-848}	2538^{+3485}_{-1224}
Alt.	-135 ± 53	$3.61^{+1.74}_{-1.38}$	791^{+58}_{-64}	6356^{+2363}_{-1184}	3062^{+6294}_{-1836}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

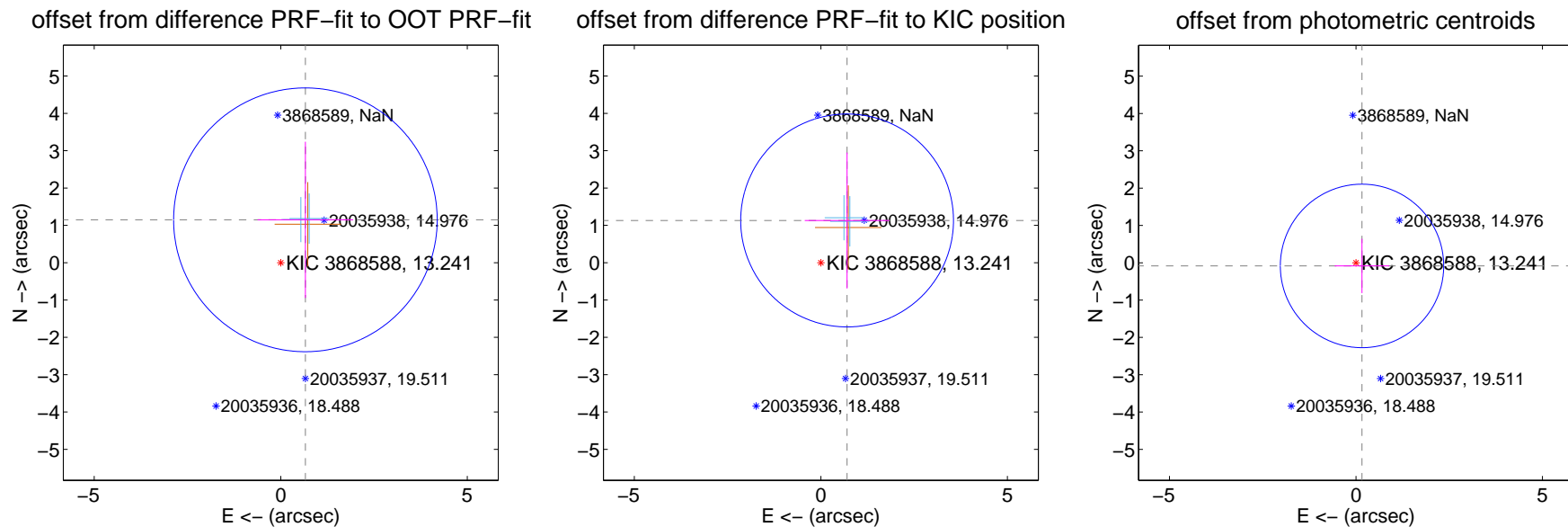
DV Centroid Data

Supplemental centroid analysis for 003868588-02. Kepler magnitude: 13.24. Transit SNR 8.71

There are 2 quarters with good PRF difference image offsets

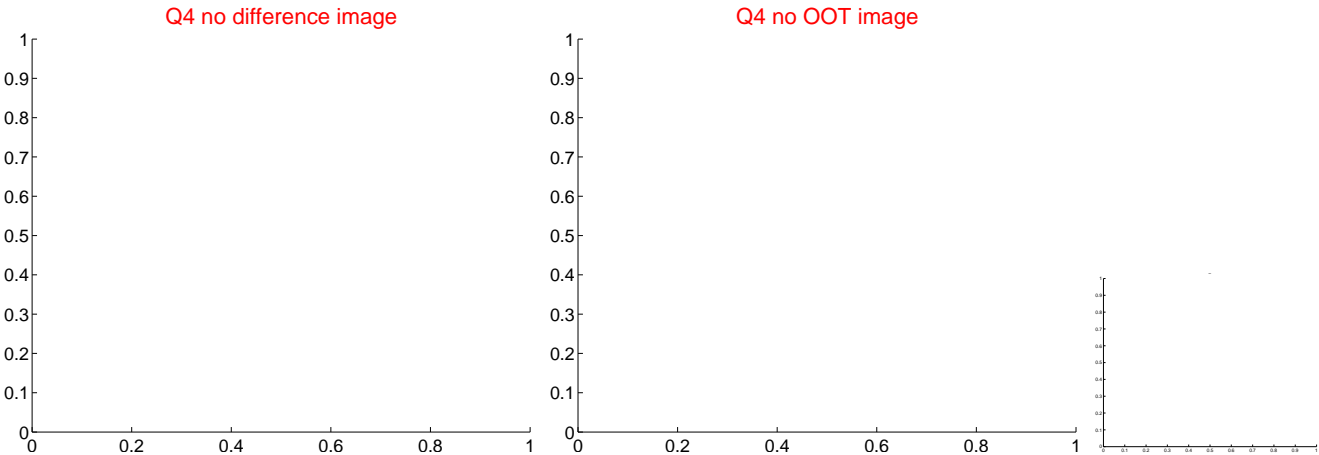
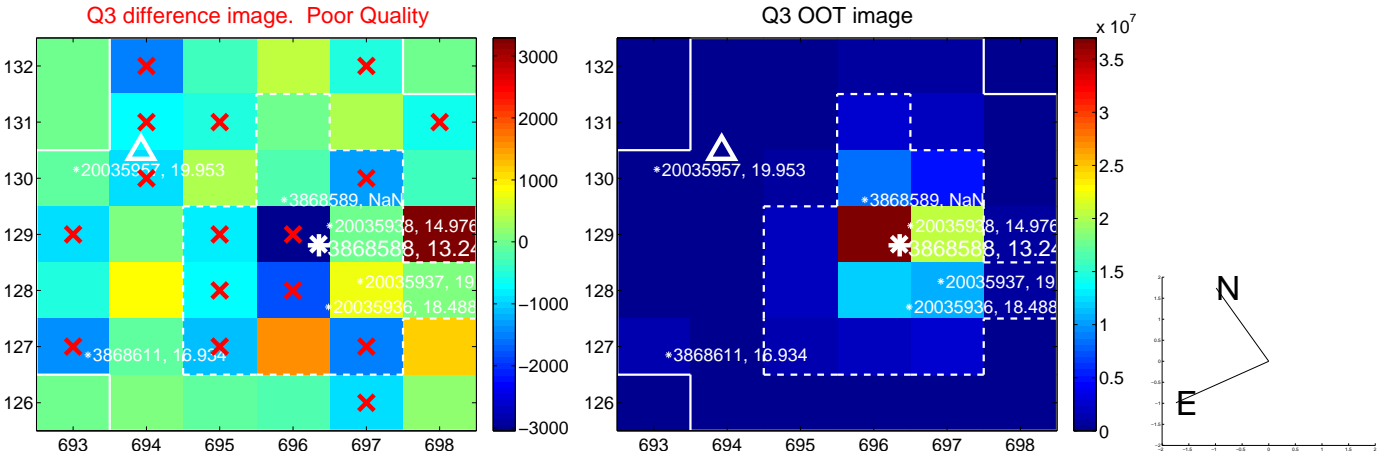
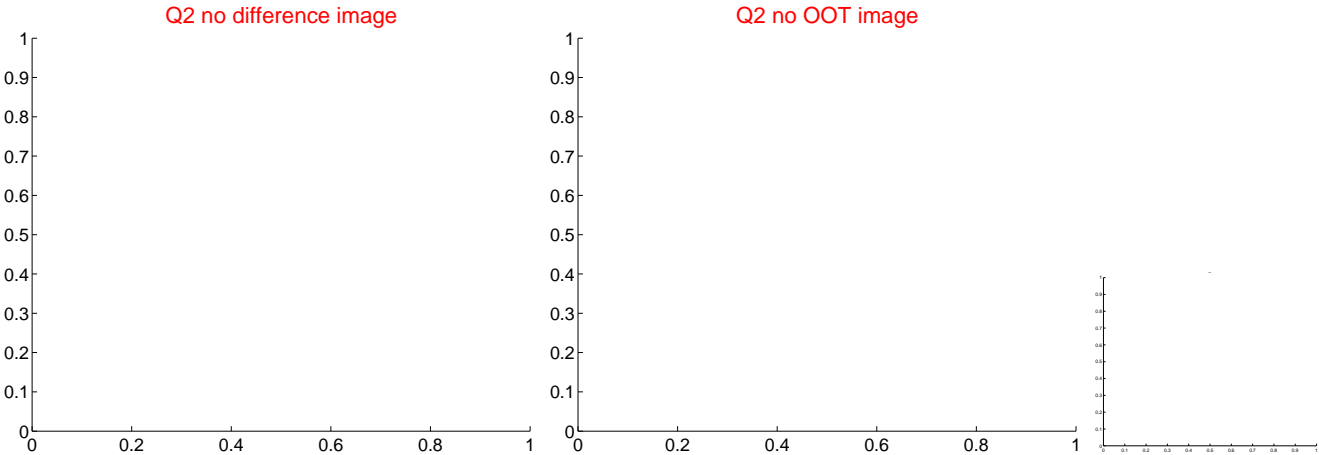
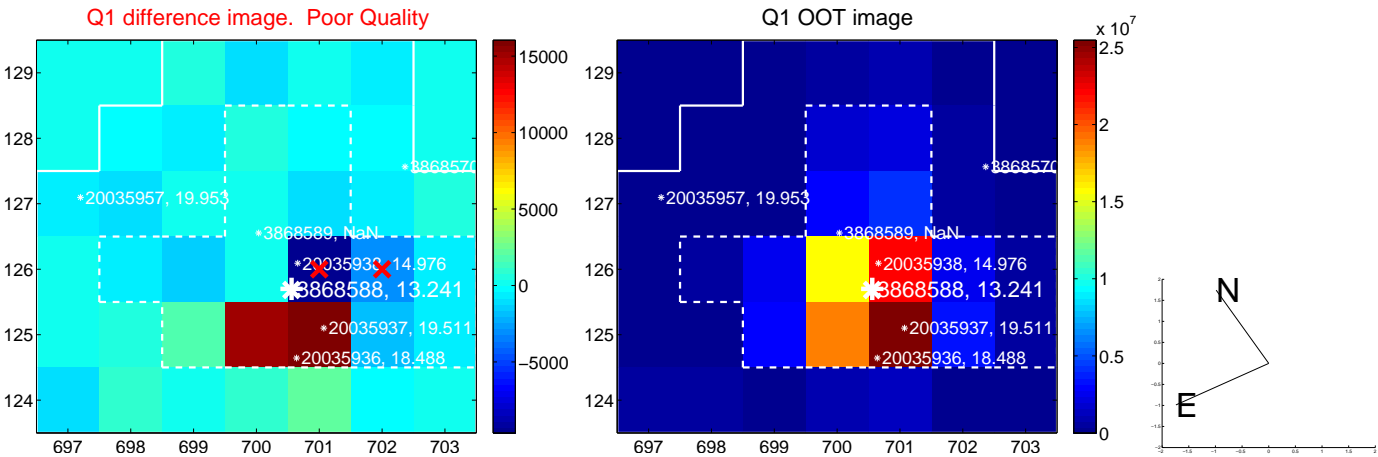
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.325 ± 1.178	1.13	-0.661 ± 1.279	1.148 ± 2.093
PRF-fit source offset from KIC position	1.332 ± 0.950	1.40	-0.703 ± 1.134	1.131 ± 1.821
photometric centroid source offset	0.18 ± 0.73	0.25	-0.16 ± 0.73	-0.08 ± 0.73

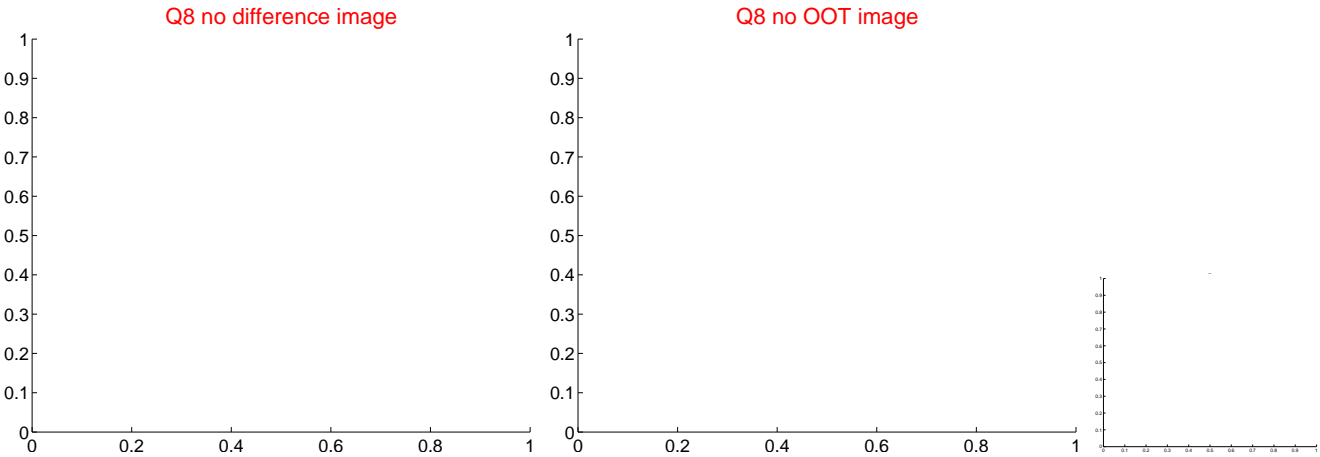
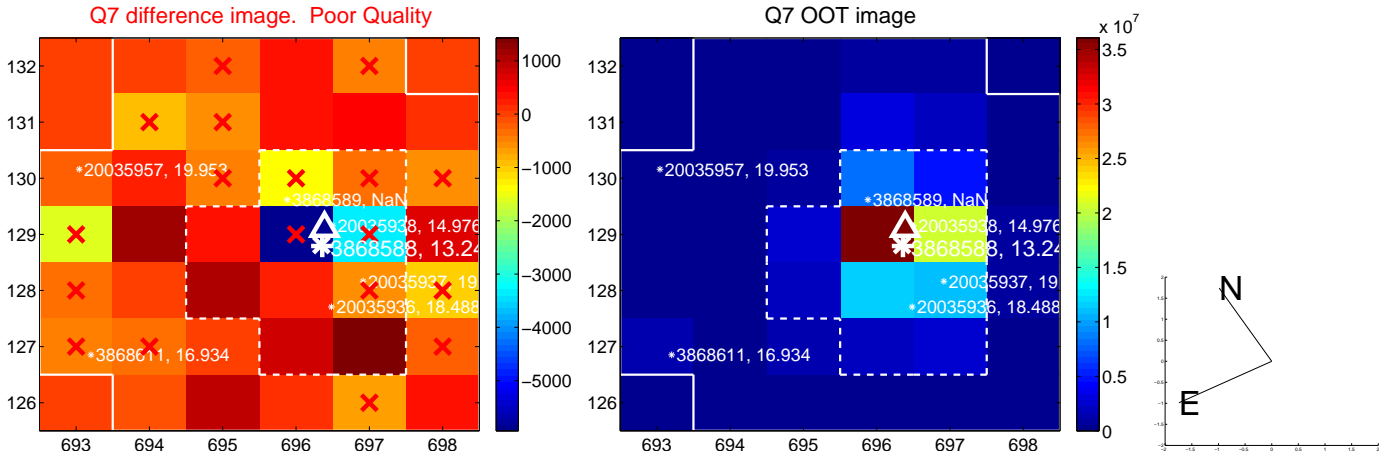
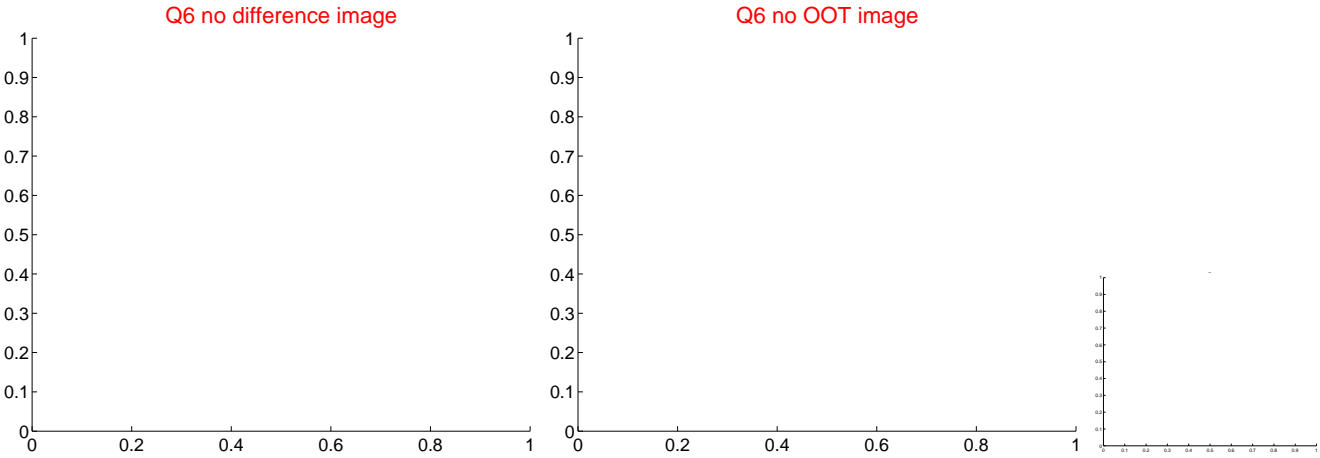
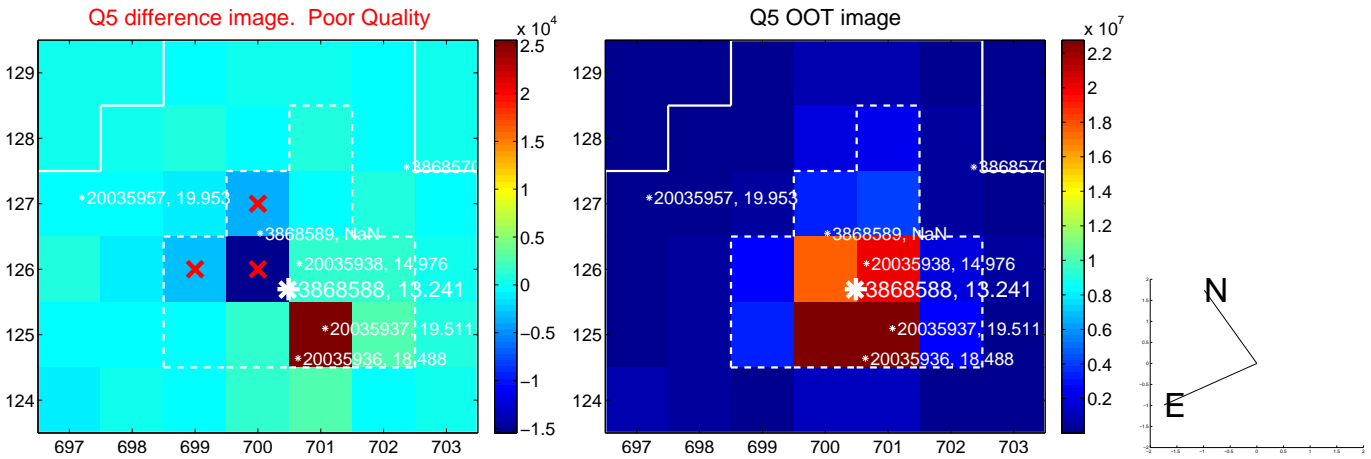


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

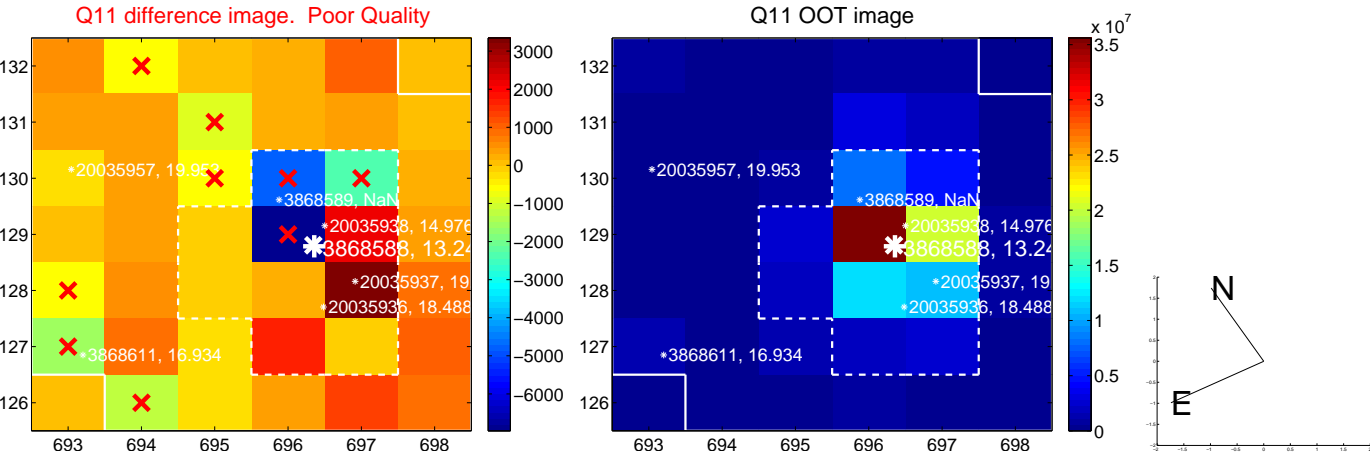
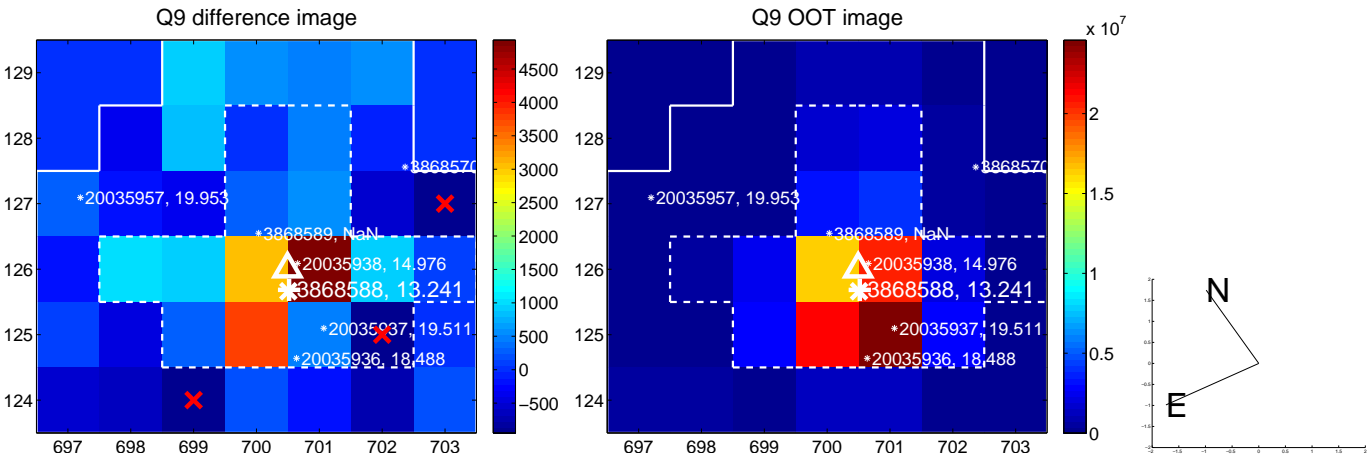
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



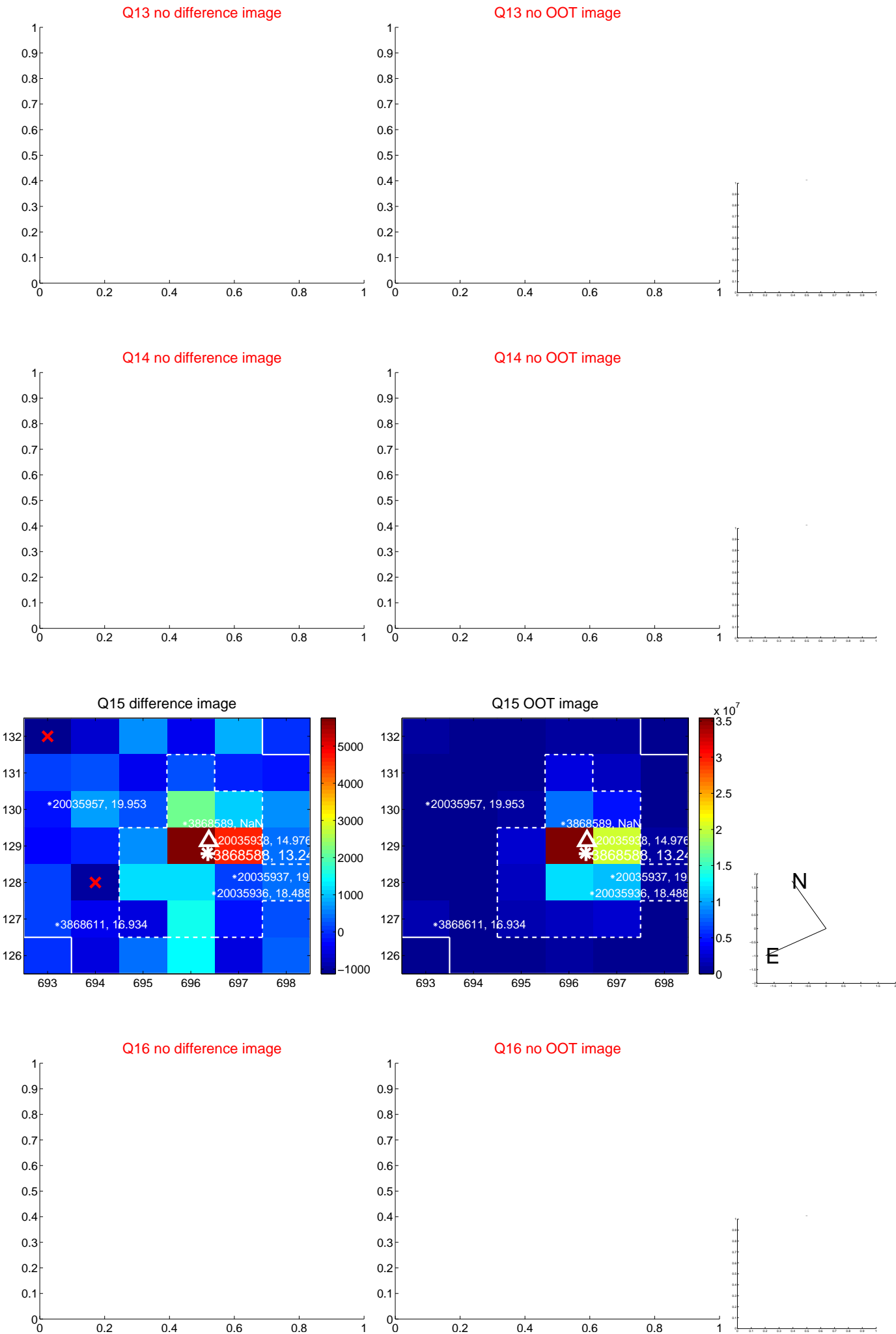
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



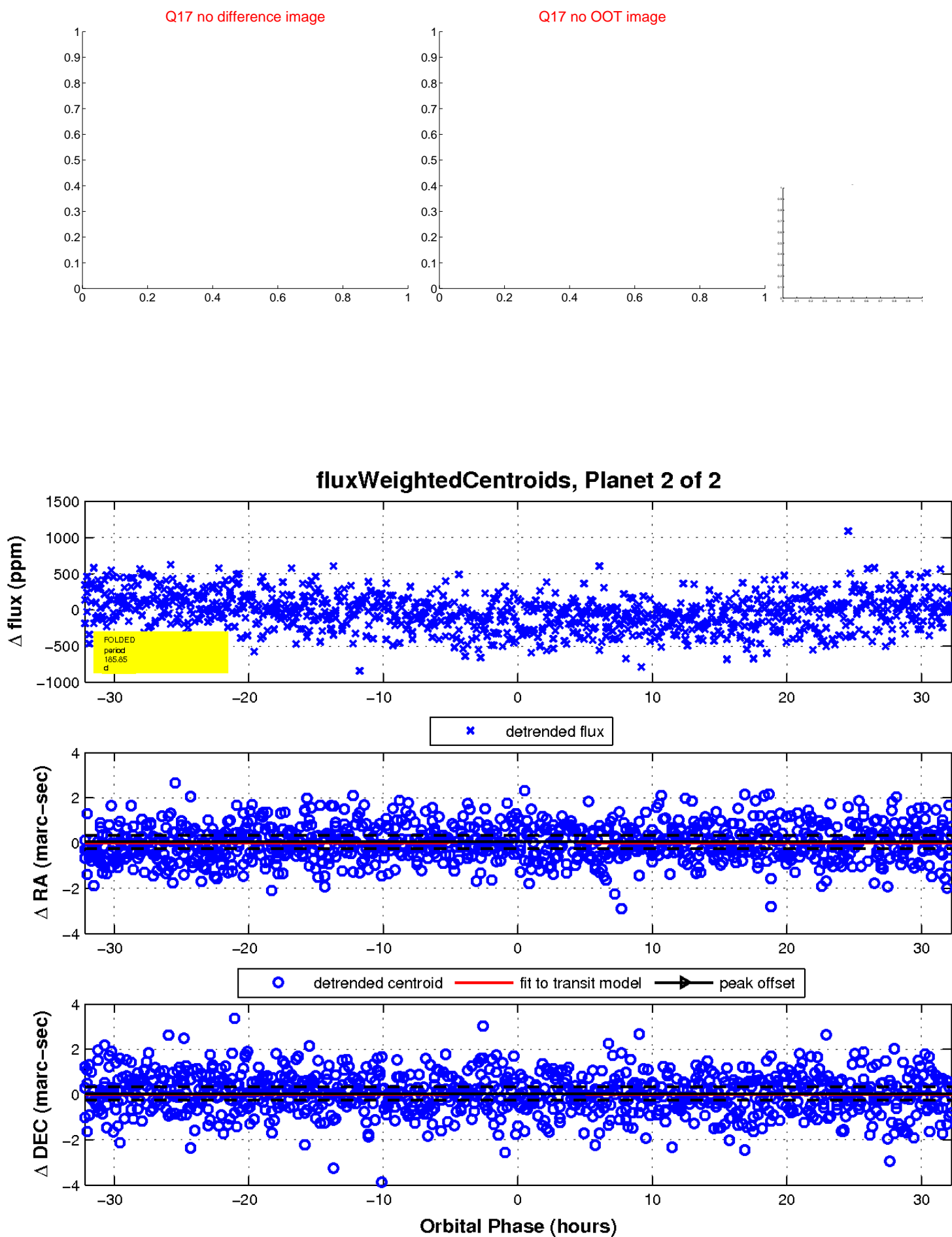
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

